THE TRIUMPH OF THE TRAMP SHIP

ARCHIBALD HURD

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THE
TRIUMPH OF THE TRAMP SHIP

The Triumph of the Tramp Ship

By

Archibald Hurd

Author of "The Sea Traders," "Sea Power,"
"The British Fleet in the Great War," etc.

With Four full-page Plates

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" We sailed wherever ship could sail,
We founded many a mighty state,
Pray God, our greatness may not fail
Through craven fears of being great."

CONTENTS

CHAPTER		PAGE
	INTRODUCTION	xi
1.	THE WORLD OF THE ANCIENTS	1
2.	THE RISE OF THE PHŒNICIANS	16
3.	THE BEGINNINGS OF GEOGRAPHY	39
4.	SEA POWER IN ANCIENT BRITAIN	56
5.	THE GREAT TRADE ROUTES	68
6.	THE END OF AN AGE	82
7.	THE INVASION OF THE OCEANS	97
8.	THE INTRUSION OF ENGLISH SEAMEN	110
9.	THE OCEAN CIVILIZATION	132
10.	THE FRUITS OF BRITISH SEA POWER	143
11.	THE UNIVERSITY OF THE SEA	172
12.	THE OCEAN EMPIRE	190
	INDEX	201

LIST OF PLATES

FACING PAGE

A NILE BOAT 18

THE ANCIENT BRIGG BOAT, CIRCA 1100 B.C. . . 20

PTOLEMY'S IDEA OF THE WORLD, A.D. 150 . . 46

MERCATOR'S MAP OF THE WORLD, A.D. 1569 . 108

JONATHAN HULLS' "NEW INVENTED MACHINE" . 156

INTRODUCTION

IN "The Sea Traders," to which this volume is a companion, an attempt was made to show by the life stories of typical merchant adventurers how our mercantile marine has been built up by the initiative, courage and foresight of individual pioneers who have never wanted support from the finest seamen who have ever sailed the seas. In the present volume the purpose has been to give the history, from the earliest dawn of civilization, of the tramp, or cargo-carrying, ship, which has been the conspicuous agent in making the resources of the world generally available to mankind. It has been well remarked by Professor A. W. Kirkaldy that "the work of the cargo tramp has resulted in revolutionizing the food and clothing, and in increasing the standard of comfort, of the great mass of mankind, the effect being especially noticeable in old and densely populated countries, whilst at the same time these increased facilities have had a very great deal to do with opening up

new countries and especially in the development of the British Dominions beyond the sea."

The term "tramp ship" has come to have a special significance in contrast with such vessels, usually known as liners—passenger liners and cargo liners—which sail regularly between specific ports in accordance with a prearranged schedule. But this distinction, which dates from the later days of the sailing ship era, is really the product of the steam age; and though it may be possible to discern in such specialized vessels as the Californian and China clippers, the East Indiamen and the West Indiamen, the forerunners of the modern liners, the technical limitations of the term "tramp" are really comparatively modern. The late Sir Douglas Owen once observed that "the term tramp seemed at the outset to convey a sort of stigma, or at any rate discourtesy, and in discussing such vessels with their owners it was formerly considered better taste to refer to them by the more respectful term of 'seekers.'" And this authority added that "any reproach which may have originally attached to the term has long since been lived gloriously down."

Though the future of the tramp ship is

uncertain, in the past these vessels have been the carriers, in particular, of the world's harvests and of most of the raw materials required for manufacture. Tramp shipping always reacts rapidly to changes of the seasons, discoveries of new sources of wealth and variations in fashion and taste, and the ubiquitous and economical services of tramp ships have laid under peculiar obligations the inhabitants of such an overcrowded island as ours. It is hardly an exaggeration to say that had it not been for the work of the tramp ship, performed during the past century or so in all conditions of wind and sea, the industrial revolution which this country experienced after the close of the Napoleonic wars would never have taken place; and instead of this island supporting a population of upwards of forty millions, it would find some difficulty in maintaining, in a state of far lower comfort, half that number of persons. Cheap and efficient sea transport, bridging the seas, has enabled the British people to enter the markets of the world on favourable terms.

As these pages show, the earlier vessels which, greatly daring, adventured from river mouths into the sea, and the later ships of larger size which at

last broke out into the oceans of the world, were, in the true sense of the word, tramps, and became not only a factor, but the primary instrument in the upbuilding of a higher degree of culture. Even to-day the greater proportion of the world's ships come under this heading. Vast, however, as is the debt of the world at large to the tramp ship and the men associated with it, it has been an indispensable agent to the British Empire in its marvellous expansion. For these reasons it has seemed worth while to attempt a brief and simple epitome of the main stages of its evolution, the principal channels of its services to humanity at large, and the chief factors which have made it so predominant in the development of the English-speaking peoples.

In writing on the influence of sea power upon history Mahan remarked that "Historians generally have been unfamiliar with the conditions of the sea, having as to it neither special interest nor special knowledge, and the profound determining influence of maritime strength upon great issues has, consequently, been overlooked." Sea power even in these later days has been most frequently studied in terms of men-of-war; but civilization

has, it may be suggested, owed much more to sea power in the form of merchant ships, and in particular to cargo-carrying or tramp ships. The man-of-war is a comparatively modern evolution to meet the needs of physical science as it has been applied in increasing measure to "contests of violence." It was not until the early years of the fifteenth century that the British Fleet was established permanently, and when Philip's Invincible Armada was overwhelmed only 34 of the 197 ships were vessels of Queen Elizabeth's navy; merchant seamen in merchant ships had no small part in this victory which changed the course of our history.

In this book it is suggested that the history of civilization may be divided into three stages. We have first the river stage, when men tried to cross the streams by which they lived for purposes of the hunt or of barter. Many centuries later they ventured out into the neighbouring seas, and it is to this remote period that the earliest known empires of the past belong. It was not until comparatively modern times that seamen invaded the great oceans of the world, for in the age-long record of humanity the Golden Age of ocean

discovery is really but little removed from our own time.

In these pages an attempt has been made to show how seamen, and particularly the seamen of what may be described as tramp ships, have extended the frontiers of human knowledge, and thus promoted the spread of civilization. As the map of Ptolemy, reproduced on another page, reveals, even so recently as the second century of the Christian era, man had little conception of the great world as we know it. It was to be the task of the seamen of later days to piece together dearly acquired experience and make us the heirs of a vast compendium of knowledge of our globe and all its fabulous wealth.

It has become an aphorism, applied in particular to the British Commonwealth, that trade has followed the flag; but, in fact, the flag has followed the trade. Seamen whose names are to be found in no history laid the foundations of the confederation of free nations which now pay allegiance to the one Throne; some of the outstanding figures still live in the pages of the historian, but the great company has passed hence, unsung and unhonoured. If this volume fulfils its

modest purpose, it will recall how much humanity, and in particular the British peoples, owe to the men who have gone down to the seas and invaded the great oceans in the spirit of high adventure. The debt to governments is small; but the debt to individuals of initiative, resource and courage is so great that it can never be paid. We have been reminded by recent tragic events that war has its heroes; but let us not forget the heroes of peace, and, in particular, the inconspicuous seamen who have been the pioneers of our world-wide commerce, have had no small part in the spread of liberal civilization to lands oversea which were unknown until they discovered them; and in these later days have vindicated gloriously our high purpose and our virility in the eyes of the world.

Acknowledgment for assistance in the writing of this volume is gratefully made to Sir William Reardon Smith, himself a conspicuous example of the triumph of character over environment; to Mr. J. Howard Glover, whose family has been so long associated with shipping; to Mr. O. J. R. Howarth, Assistant Secretary of the British Association, and to others who have forwarded this

modest endeavour. Writers, ancient and modern, have, as these pages reveal, been placed under tribute.

Those who are prompted to pursue this fascinating subject further will find in Professor J. R. Seeley's "Expansion of England," and in "A Short History of British Expansion," more recently written by Mr. James A. Williamson, books which will richly reward any reader. Interesting sidelights on the evolution of the sailing ship are shed by Mr. E. Keble Chatterton in his "The Sailing Ship and its Story."

A. H.

The Triumph of the Tramp Ship

CHAPTER I

THE WORLD OF THE ANCIENTS

The Influence of Water upon Civilization—The Primitive Origin of the "Tramp" Ship—The First, or River-Civilizations—Beginnings of Sea-traffic in Sumeria, Babylonia, Egypt, and Crete—The World as it was Known in 2000 B.C.—Early Evidences of Culture.

IF it were said that modern civilization began with a drop of water and a grain of wheat, the statement, so surprising in its implications, might be regarded as an exaggeration. But it is certain, in respect of the early evidences of civilization, that this was almost literally the case, for history—legendary history it may be—goes back to the remote time when men, abandoning their nomadic habits, settled on the banks of great rivers to grow wheat for their support.

From the farthest removed stage of the evolution of mankind the development of the simplest human associations was dependent upon, and con-

ditioned by, good supplies of water, and through the tens of thousands of years comprising what are now known as the early and late Stone Ages the first tribes of men necessarily haunted lakes, springs and river basins in search of their daily food.

This was the first phase of the civilization of the river, and constituted the beginning of sea power. At that period the seas and oceans of the world were desolate waters on which no man had yet adventured his life and fortunes. They were in the condition suggested in the first chapter of Genesis, where it is written that "God created great whales and every living creature that moveth, which the waters brought forth abundantly." Man had yet to conquer the uncharted seas and assert his dominion over the boundless oceans.

Through these mysterious centuries primeval men naturally developed more quickly in some regions than in others; they discovered the first principles of language, learnt how to make fires, and how to work stone and shape it to their varied uses; and it was during this time that the three great primary families of mankind became more and more distinctly differentiated.

Of these, what are now known as the Caucasians—from their reputed origin in the southern meeting-place of Europe and Asia—

seem to have advanced more rapidly than either of the others and to have become the predecessors of what may be broadly described as the white races of humanity. To the east, or Asiatic side of them, beyond a line extending from Lapland to Siam, the precursors of the Mongols, or yellow races, occupied the greater part of Asia and spread across the bridge of land which then existed between north-east Asia and the north-western extremity of the great American continent. In Equatorial and South Africa the third great group, the negroid, remained the least developed of these three great divisions.

Of course, each of these main groups of the common human family was subdivided into many strikingly distinct tribes or clans. At the frontiers between them they more or less blended, while throughout the vast areas which they occupied, there were continual migrations from hunting-ground to hunting-ground or from the less favourable and more barren upland regions to the more fertile and well-watered areas below. At some period, too, during these dim ages, representatives of the more restless and progressive Caucasians seem to have wandered, necessarily slowly and in comparatively small numbers, across the bridge of land then uniting the southern extremity of Asia with the Australian continent, and to have been

marooned there by subsequent vast upheavals which caused alterations in the distribution of the land and sea. At any rate, remnants of what is believed to have been a very early Mesopotamian, or Egyptian, form of worship have been found in Polynesia, as well as in South America, probably as the result of these remote migrations of the Stone Age.

Then came wheat. Somewhere, conjecturably between 20,000 and 15,000 years before the birth of Christ, the tremendous discovery was made, probably in Mesopotamia, that wheat could be planted in upturned soil and made to yield one hundred and even two hundred-fold. From this discovery of the way to grow wheat sprang the first beginnings of civilization in the accepted sense of the word. Water, of course, was essential to the development of this new human enterprise as well as soil. Hence we reach the broad conception of civilization beginning with a drop of water and a grain of wheat.

The fight for progress now became definitely the fight for the great rivers and their fertile surroundings. In these areas alone could wheat be planted with the reasonable certainty that it would come to fruition year after year, and even, in some regions, two or three times a year. In this fashion it came about that mankind, not

unwilling to abandon the discomforts of the ever-wandering gipsy-like life of the hunter, received the first stimulus to build more or less permanent homes. In the new leisure, provided by this magic wheat, ripening at the very doors of the first sedentary human tribes, the arts and crafts began to blossom with a new and much wider richness and variety.

With the realization of the secret of Nature's hidden wealth, it may incidentally be added, came the foundations of what we know as capitalism, for in order to ensure future harvests some of the grain was put by. This constituted the beginnings of thrift, and from thrift capitalism gradually assumed the character familiar in the Old Testament where reference is frequently made to the wealth of familiar Bible characters, asssessed not in terms of money, but usually in those of heads of cattle or sheep or other convenient mediums. When we read that "Noah began to be an husbandman, and he planted a vineyard," it is as though we are introduced to a capitalist, a thrifty, industrious, foreseeing man.

Thus it happened that it was in association with two of the sunniest, most fertile, and most advantageously placed river systems, as well as in the well-watered island of Crete, that we find the three earliest civilizations, based on water and

wheat, emerging into the dawn of history. These were, of course, the ancient cultures associated with the rivers Tigris and Euphrates, opening into the Persian Gulf, which then extended some hundred miles or so farther inland than it does to-day, and with the lower regions of the river Nile on its way to the eastern waters of the Mediterranean; while, later on, another more or less independent, and Mongol, civilization had its beginnings in and about the great river-bed of the Hwang-Ho and Yang-tse-Kiang in China.

For many centuries, however, these upgrowths of what may be termed river-civilization remained almost entirely local, each confined to its particular river area, and having but comparatively small influence, if any at all, upon the great outside world of which little or nothing was known. Each division of the human family formed a little world to itself, living its own life.

Civilization in the very modern sense was, of course, still practically non-existent; and it was not until the call of the sea was heard that the next step in the slow progress of world civilization was taken. This sea-civilization came into being in the eastern waters of the Mediterranean, the Red Sea, the Persian Gulf, and the northern area of the Indian Ocean, upon the seacoasts of which there descended some of the various subdivisions

of the nimbler-witted, energetic and rapidly advancing Caucasians or white peoples. Later, as we shall see, this movement was to be followed by the ocean-civilization of modern times; and in this vast development, as well as in the growth and spread of human world-knowledge, there was no other factor so vitally concerned as what we have now come to call the "tramp" ship—the ship of commerce, or exchange—which carried on the primitive trading activities of neighbouring peoples.

This was the means by which those widely separated centres of the earliest human cultures were enabled to share each other's discoveries and contribute to each other's, as well as the world's, common progress. These were the vessels upon whose tidings the first geographers plotted their maps, or by whose aid they were enabled to verify the crude deductions that had already been made. By these agents the achievements of the more advanced communities were made available to the less advanced, and it was with the raw material brought back in the holds of tramp ships that the arts and crafts began to climb to their first remarkable triumphs.

So vast, indeed, is the debt that the whole world owes to the perennial courage and enterprise of the obscure and ubiquitous tramp that in a

volume such as the present one it will only be possible to indicate in merest outline the chief stages of evolution. The wanderings of the tramp ship over the rivers, the seas and the oceans have been so inseparable from the history of humanity that it is difficult to select any particular starting point for such a record. When the first hunter, pricked by the necessity of obtaining food, or fired by the chase and his own natural curiosity, crossed a river on a fallen tree-limb, or a bundle of dry reeds, propelled by himself, the tramp ship came to birth and entered the service of man. Somewhere between the ever-receding date at which modern science places the conjectural origin of man and the first faint dawn of what may be termed history—ten thousand years before the advent of Christ—wind and water had probably become harnessed in definitely recognizable sailing vessels. It is at any rate beyond doubt that by the time the civilizations that we have already mentioned had emerged out of legend into history seagoing vessels of comparatively effective types were in use.

Of these civilizations probably the most ancient was that of the Sumerians, who flourished in the region of the rivers Tigris and Euphrates—in the very land that, according to the Hebrew scriptures, was the actual cradle of man himself, though the

latest theory of the modern anthropologist now places this in the foot-hills of the Himalayas. These people had developed from what was probably a more primitive and widely distributed Caucasian race, known as the Iberian or "dark white" race, of which representatives may still, it has been suggested, be found in the Basques of Spain. They were later to be conquered by many succeeding and more virile races, who, in varying degree, absorbed and developed the original Sumerian civilization that they found. It is probably the case that before the year 4000 B.C., or even possibly 6000 B.C., these Sumerians had founded their famous seacoast city of Eridu, at the head of what is now the Persian Gulf; and it is only reasonable to suppose, therefore, that Sumerian ships of some sort were accustomed to sail down the coasts of India, and were probably familiar with the southern Arabian seaboard, the Red Sea and the east coast of Africa. Upon the waters of the Tigris to-day there can be seen floating structures of hide and wicker, or even of simple inflated hides, that are, with the smaller coracles of Wales and Ireland, the contemporary representatives of some of the most ancient types of vessel in the world.

Afterwards submerged by successive waves of conquerors from Arabia, from what is now Asia

Minor, and from the mountainous regions of the north-east, the first great emperor to overcome the Sumerians and extend any sort of sway from the coast of Palestine to the Persian Gulf—the first foreshadower, that is to say, of the later Babylonian Empire—was one Sargon of Akkad, of about 3800 B.C. He was a member of one of the numerous tribes of what have been called the Semitic peoples, of whom the Jews formed a subdivision or a clan, and of whom the Amorites, Hittites and Phœnicians were afterwards important members. In these circumstances there sprang up a high state of civilization, for we read of the work of judges, musicians and physicians; and roads were made. But little or nothing was known by these people of the world as we know it, and Naram-Sin, who flourished about 3750 B.C., described himself as "King of the Four Quarters of the World," though he held sway only over what appears now as little more than a pin-point on an ordinary map such as we possess. It may be accepted that long before Sargon had asserted his supremacy over the lands extending between these two seacoasts, the Mediterranean had also witnessed the establishment of an inter-island and coastwise sea-traffic by what to-day would be known as tramp ships.

Confirmatory evidence of this can be gathered

by recalling the great civilization that had by this time come into being upon the banks of the Nile —a civilization considered by some to have been older than that of the Sumerians and which had already conceived and built the Pyramids before Sargon had asserted his sway over Mesopotamia. From wall paintings and wooden models which have been excavated in recent years, and whose date is contemporary with the Pyramids, it is clear that vessels rigged with sails, steered by paddles, and large enough to accommodate a considerable number of people were then actively plying upon the Nile. An Egyptian vase is also to be seen in the British Museum, of the presumed date of 6000 B.C., upon which can be traced the outline of a much more primitive but still recognizable sail-driven vessel.

That the art of navigation must have reached a very considerable degree of perfection by 3000 B.C. is also clear from the record that has come down to us of the voyage of a fleet sent out by Sankh-ka-ra, a Pharaoh of Egypt, somewhere about that time to the land of Punt, which is probably to be identified as our modern Somali-land. Bronze vases of Cretan origin of this period have been found in Egypt, which are evidence not only of the remarkable culture that existed in the Mediterranean island, but of a brisk trade

between this highly civilized state and the pyramid-building dwellers in the region of the Nile.

From the earliest beginnings of history, therefore, the river-mouth and the seacoast civilizations were equipped with the means of navigation, and it is clear that the world of 2000 B.C. had already a good deal of knowledge of the crafts of ship-building and seamanship, besides being acquainted with the coast-lines of what we know as the Middle East and Near East. To us who are in sight of A.D. 2000 it cannot but be interesting to glance back for a moment, and before proceeding to consider the immense progress made by sea travel in the thousand centuries which immediately preceded the birth of Christ, to try and picture for ourselves the world as it was known to mankind in the year 2000 B.C.

This was the date at which the civilization of Crete, throned in splendid isolation upon the Mediterranean, was probably at its zenith; it may well have been, owing to the island's immunity from foreign invaders, and the strength which it extracted from the waters which washed its shores, the most advanced then in existence. With an almost modern knowledge of architectural principles and of drainage, the inhabitants of Crete were not only skilled in sculpture, in metal and ivory work, and in the arts of weaving and

embroidery, but they had also established the first beginnings of a generally accepted system of international sea-law. Their ships traded with Egypt, itself enjoying a good many of the comforts of life, with the more barbaric Libyan tribes on the north coast of Africa, and with the still largely migratory and primitive clans which occupied what was afterwards to become the seat of the wonderful Greek culture.

In Egypt the dynasty of the "Shepherd" Semitic Pharaohs was probably already established, and the Pyramids had become as ancient to the contemporary passers-by as a relic of Julius Cæsar seems to us to-day. In Babylonia, the great empire of the enlightened monarch Hammurabi—probably the Amraphel mentioned in the Book of Genesis—had also most probably just come into being, with its vast temples, its elaborate system of irrigation by means of canals, its great granary, and its wise and humane code of justice. There were also growing into power along the Canaanitish coast some comparatively newcomers in the shape of the Semitic race of Phœnicians, who were afterwards destined to provide the early world with its greatest sailors, sea-traders and explorers. With these people we shall deal more fully in the next chapter, but by 2000 B.C. they had already founded the cities of Sidon and Tyre, cities of

wonder and mystery, and had begun to build up the reputation for shrewd and courageous seamanship that was presently to dwarf that of all the earlier peoples who had sailed the waters of the Mediterranean.

Such, briefly, was the little civilized world of 2000 B.C. Far away in China—constituting then what was in effect another world—another remote and curiously self-contained civilization had, it is true, definitely come into being. The Chinese, indeed, claim that their history goes back to the thirty-seventh century before the advent of Christ, and certainly by the twenty-seventh century one of China's rulers had organized his empire into departments and had built roads, while his wife is reported to have been the first to spin silk. It is safe to say that the worlds of Babylonia, Crete and Egypt knew nothing, or very little, of what was happening in China even if they were aware of its existence. For the rest, the forests, vales and steppes of northern Europe, the great continents of North and South America, and the whole of tropical Africa, as well as Australia and New Zealand, were inhabited by tribes of men at various primitive stages of social evolution who were of little or no account. While as regards our own country, now the pivot of a world Empire, it is interesting to recall that the Druidical worship

associated with Stonehenge and the open-air temples of Avebury, in Wiltshire, was being practised. Our forefathers, indeed, can hardly be described as dwelling in even the twilight of civilization as it had developed in the regions which have been mentioned.

Lacking the means of transport, the knowledge of navigation and the arts of shipbuilding, the greater proportion of the world was still struggling along, unaided and largely independent. Upon uncharted rivers men propelled themselves in rudely hollowed tree-trunks or in cases of plaited wickerwork covered with the skins of wild animals. For them even the river-stage of civilization hardly existed, the second, or sea-stage, had not begun, while the ocean-civilization that was eventually to embrace them in its influence was hidden in the womb of time.

CHAPTER II

THE RISE OF THE PHŒNICIANS

Improvement in Shipbuilding and Navigation—The Rise of the Phœnicians as Seafarers—Famous Early Phœnician Voyages—Colonies Overseas Established—The Founding of Carthage.

WE have seen that by the year 2000 B.C., and probably far earlier, the second, or sea-stage, of world civilization had been definitely begun by the pioneer mariners who adventured out from the river mouths in their frail craft. But before tracing the progress of this evolution down the centuries preceding the dawn of Christianity, let us glance for a moment at the types of vessel that were then to be found in this little world which seamen of initiative and resource and courage were, so to speak, to enlarge until the knowledge of man conceived the idea of a vast globe revolving with other worlds round the sun. Of these vessels the earliest of which we have any detailed knowledge were Egyptian, and it was probably in Egypt, so favourably placed between the Red Sea and the Mediterranean, and with the waters of the Nile as the first school of seamanship, that the art of

shipbuilding first acquired characteristics that have since become world-wide.

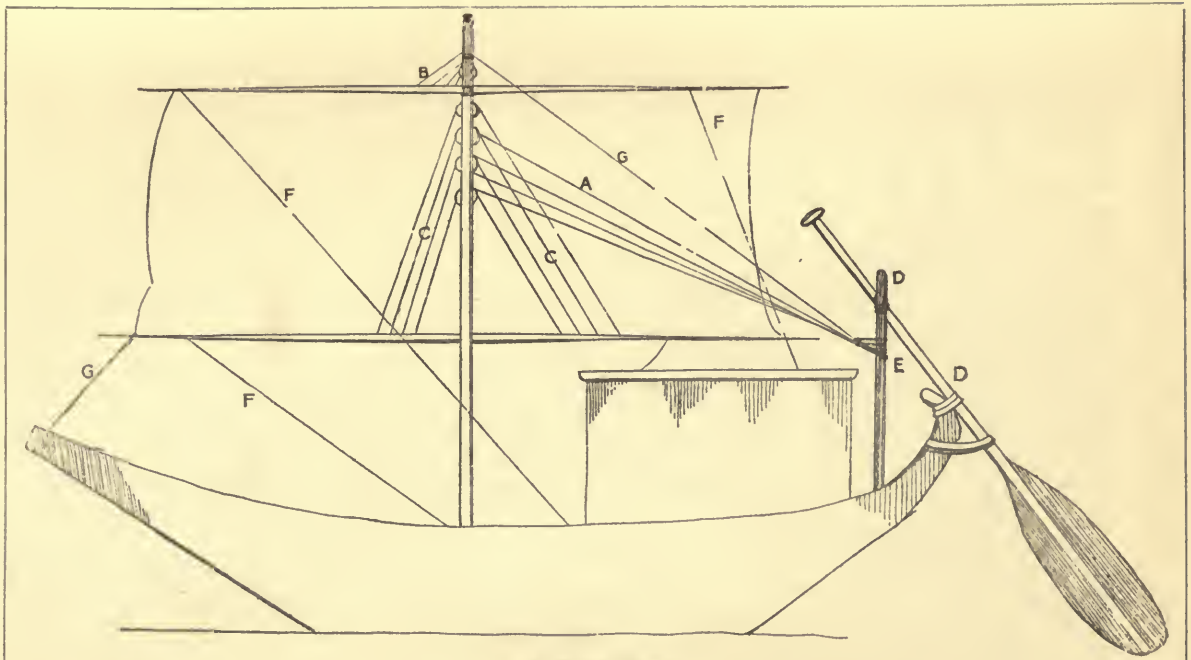
Upon the calm, placid and easily navigable waters of the lower reaches of the Nile,[1] Egypt was provided with almost ideal conditions for the birth of the art, and before the year 2000 B.C. the Egyptians had developed a vessel with high overhanging bow and stern, and a mast carrying a square sail of finely woven material which could be lowered at will. The vessel was sufficiently large to accommodate several men, had paddles for its propulsion, and could be steered by paddlers on each side at the stern. By the fifth dynasty these stern paddles had been replaced for steering purposes by a single oar placed centrally in the stern and worked by one steersman, while the original A-shaped mast had disappeared and a single mast had taken its place, held in position by backstays, and carrying a yard from which was rigged a wide and shallow sail. A very similar type of vessel is still to be found in eastern Asiatic waters in the shape of the ordinary Chinese or Burmese junk, and it is only reasonable to suppose that this pattern represents the survival of some early Egyptian influence.

By 2000 B.C. oars had come into use, and sea-

[1] As early as 2300 B.C. the XIIth Dynasty constructed great embankments at Lake Moeris to protect the town of Crocodilopolis.

men realized the benefit of propelling a boat by oars handled by men rowing with their backs to the vessel's bow; the earliest oars were thrust through thongs, later on to be replaced by row-locks. A permanent yard had also been fixed to the mast, upon which the sails were furled by the use of brails or ropes made of hide or papyrus. All these early vessels of the Mediterranean, Red Sea and Persian Gulf depended, of course, primarily upon paddles, and later upon oars, for their motive power; the wind was merely an auxiliary. The art of tacking and sailing against the wind had not yet been acquired, and the sail was used only as an adjunct to the efforts of the rowers when a following wind made its use favourable.

For many centuries this type of high-bowed, high-sterned vessel, provided with a single mast and carrying a wide, shallow sail, steered by one or more stern oars and propelled by from fifty to sixty rowers, remained the common type of vessel of the Egyptians, Cretans, Phœnicians, Greeks and Romans in these waters of the world. In seas where the winds were light and variable, and calms were common, in contrast with the stormier waters of the Baltic and North Sea, such little craft would most naturally have been evolved for use in peace; for the purposes of war the mast



A Nile Boat

A—Rigging. B—Halyards, C—Stays. D—Rudderhead, E—Rigging Bobstay. F—Braces. G—Sheets.

and sail were usually lowered before going into action, the necessary manœuvring being done by the rowers, of whom, owing to the large number of slaves available, there was never any lack.

In other parts of the world, of course, such as the Baltic and the rivers and river-mouths of Norway, Sweden, Germany, Holland and Great Britain, the more primitive dug-out or hollowed tree trunk was still, as we have said in the previous chapter, the commonest type of vessel. Of this a wonderful example was unearthed at Brigg, in Lincolnshire, upon the banks of the river Ancholme in the year 1886, and this specimen is now to be seen in the Hull Museum. Believed to date from about 1100 B.C., it shows how vast was the gap that had already been bridged by the contemporary shipbuilders of Tyre or Sidon.

Hollowed out of the trunk of a single straight tree, this primitive boat is 47½ feet long, and the width varies from 4 feet 3 inches at the bows and 4 feet 6 inches at the stern to 5 feet 5 inches in the middle. The depth outside is 2 feet 4 inches at the bows and 2 feet 11 inches at the stern.[1] As the accompanying illustration shows, the bow was rounded, while a hollow in its head suggests that a bowsprit had been designed to rest there. The

[1] Mr. T. Sheppard in *The Mariner's Mirror* of August, 1922, gives a full description of this ancient boat.

The Ancient Brigg Boat. Circa 1100 B.C.

stern corresponds with the lower end of the tree, whose diameter must have been considerably over 5 feet. It is known that upon all these northern coasts great oak forests were to be found at this time, and this particular vessel was evidently shaped from some gigantic oak grown, probably, in Scandinavia. Somewhat similar vessels have been found in other parts of England and Scotland, as well as upon the Continent, though by this time the principle of constructing vessels with wooden ribs, over which the hides of wild animals were stretched and sewn together, must have been well known in most of the northern seacoast countries. A curious reminder of this, at one time almost universal, method of ship construction, is to be found in our reference to a ship's "seams," while the planks nailed upon its ribs are known as the "skin."

Interesting as is the Brigg boat, the sea history of the next 1,500 years is practically the sea history of the Phœnicians; and no account of the tramp ship, however brief, could neglect some account of a people whose sea-genius has been, in many respects, the most remarkable in the history of mankind.

Originally the Phœnicians, like the Jews, formed a small and comparatively insignificant member of that great Semitic group of tribes to

which reference has already been made. The exact origin of this group is obscure. That it became dissociated from the other Caucasian "dark white" races somewhere during the Stone Age and tended to migrate south in family parties is probably the case. Some of these parties eventually became enslaved by the more powerful peoples with whom they came into contact. Others waxed stronger and became more numerous as they wandered about in nomadic independence. The various groups of cousins, as it were, gained distinctive qualities; they gradually formed definite tribes and separate nations, and then returned north out of Africa and Arabia to found, amongst others, the great Babylonian, Hittite and Assyrian empires, as well as the little Judean kingdom whose story has come down to us in the Old Testament.

The Phœnicians appear to have belonged to the coteries of smaller Semitic tribes which settled in Canaan and the Jordan Valley, and to have been subsequently pushed up against the coast by the incursions of more numerous and powerful kinsmen. They finally settled in the long and narrow strip of country, some two hundred by thirty to forty miles, between Lebanon and the sea, in what is now known as Northern Syria, and founded a series of towns, of which the earliest was probably Sidon, Tyre afterwards becoming the most famous.

These towns have long since dwindled into unimportant villages, but upon the site of another Phœnician town, Berytus, the flourishing seaport of Beyrout stands to-day.

Upon this comparatively restricted and narrow piece of country, forced there by necessity, but possessing in full the characteristic Semitic genius for trade and manufacture, the Phœnicians developed an individual maritime and colonial habit of life which was quite new in the history of mankind. Although in 2000 B.C., when the Cretan, Egyptian and Babylonian civilizations were each at their zenith, they would probably have been regarded by a cultured householder in Cnossos or Babylon as simple, barbaric, deep-sea fishermen, they were soon destined to exercise an influence wider and more profound than that of even their greatest contemporary.

In the territorial sense they were of little account as compared with their mighty neighbours who drew their strength mainly from the land; they were outnumbered by them many times over. But they were the first people, in a collective sense, to realize the enormous possibilities of sea-power. By the sea they lived and had their being. By means of the sea they preserved their racial independence in the face of immense odds; and so invaluable was their sea-knowledge to the various

great competitors that in later centuries contested with each other for world-dominion, that they were always able to make satisfactory terms for themselves. It was not until the Christian era dawned that they finally lost their individuality in the all-embracing empire of Rome.

After the fall of Crete, in which Phœnician vessels probably played a considerable part, the mother-country passed under the influence of Egypt; nevertheless it was during the latter part of this period, which ended about 1100 B.C., that the Phœnician sailors and sea-traders began to found their earliest colonies. In Cyprus, Sicily, Sardinia and Malta, and at various points on the north coast of Africa, they planted settlements for the opening up of trade, for above everything else they were sea-traders. At Tarshish, otherwise Tarsessus, in south-west Spain, and at Gadeira, now Cadiz, they had established by 1000 B.C two of the chief foreign sources of their future wealth. In these districts they discovered and worked silver mines and seams of other valuable metals which brought them enormous profits, and they prospered on the produce of the extensive fisheries which they also developed in these regions. They made, in addition, no mean income as distributors of Egyptian, Babylonian and other wares in less civilized regions. They also opened up rich tin

deposits in north-west Spain, the Scilly Islands and possibly also Cornwall, and were all the time breeding and training an ever more experienced and skilful race of navigators.

All this led, of course, to a rapid increase in importance of the parent towns of Tyre and Sidon, and from about 1100 B.C., when the Egyptian domination over Phœnicia lapsed, until probably 870 B.C., when the Assyrian empire was in the ascendancy, Phœnicia, in an interval of more or less complete natural independence, made enormous strides both in influence and prosperity. It is during this period that the Phœnicians made their appearance in the literature of their Israelitish neighbours.

Indeed, we have many references to them in the Bible, which can always be re-read with profit for the light which it throws on these people. Thus, from the twenty-seventh chapter of Ezekiel, which is a lamentation for the city of Tyre, we gather some idea of the variety and extent of the enterprise of the contemporary Phœnician merchants—sailors almost to a man: "O thou that art situate at the entry of the sea, who art a merchant of the people for many isles, Thus saith the Lord God: O Tyrus, thou hast said, I am of perfect beauty. Thy borders are in the midst of the seas, thy builders have perfected thy

beauty. They have made all thy ship boards of fir trees of Senir; they have taken cedars from Lebanon to make masts for thee. Of the oaks of Bashan have they made thine oars; the company of the Ashurites have made thy benches of ivory, brought out of the isles of Chittim. Fine linen with broidered work from Egypt was that which thou spreadest forth to be thy sail; blue and purple from the isles of Elishah was that which covered thee." This last is, of course, a reference to the famous Tyrian dyes made from the murex, a shell-fish discovered and exploited by Phœnician fishermen. A little later on we read, in verse twelve, that "Tarshish was thy merchant by reason of the multitude of all kind of riches; with silver, iron, tin and lead, they traded in thy fairs." Then, again, in verse sixteen it is recorded that "Syria was thy merchant by reason of the multitude of the wares of thy making; they occupied in thy fairs with emeralds, purple and broidered work, and fine linen, and coral, and agate. Judah, and the land of Israel, they were thy merchants; they traded in thy markets wheat of Minnith, and Pannag, and honey, and oil and balm." We are further told, in verse twenty-one, that "Arabia and all the princes of Kedar, they occupied with thee in lambs, and rams, and goats; in these were they thy merchants. The merchants of Sheba and

Raamah, they were thy merchants; they occupied in thy fairs with chief of all spices, and with all precious stones and gold. . . . These were thy merchants, in all sorts of things, in blue clothes, and broidered work, and in chests of rich apparel. bound with cords and made of cedar, among thy merchandise. The ships of Tarshish did sing of thee in thy market; and thou wast replenished, and made very glorious in the midst of the seas." And again, in the thirteenth chapter of Nehemiah, verse sixteen, it is stated that men of Tyre dwelt in Jerusalem "which brought fish and all manner of ware and sold on the sabbath unto the children of Judah and in Jerusalem."

Solomon, too, obtained cedars and firs and skilled carpenters, as well as gold, from Hiram, king of Tyre, in return for supplies of oil and wine and a grant of land in Galilee. A contingent of Phœnician ships is mentioned as sailing in company with the ships of Solomon from Eziongeber, on the Gulf of Akaba, to Ophir, on the east coast of Arabia. In these passages we have a picture of the early tramp ships of the Phœnicians, and can form some idea of the initiative, courage and business ability which they exhibited.

It was not, however, until about a century after the death of Solomon that the greatest of the Phœnician colonies was established at Carthage, on

the north coast of Africa, on the shores of what is now the Gulf of Tunis. It rose upon the site of an older settlement created perhaps 800 years previously by traders from the city of Sidon. Founded about 850 B.C., the city of Carthage was eventually to lay claim to no fewer than a million inhabitants, and the lordship of the whole of the Mediterranean, while it could boast of possessing the greatest sailors of the time. Let us, therefore, pause at this point to take a brief general survey of the slowly expanding and progressing civilized world.

Crete as the centre of perhaps the most wonderful of all the earlier civilizations had disappeared. Egypt as a great sea-power was slowly but definitely declining, and within a couple of generations was to pass for a time under Ethiopian control. The great empire of Assyria, with the stone-walled city of Nineveh as its capital, had developed into one of the world's chief empires, and Babylonia was still a mighty force in the east. The age of iron had hardly yet begun, but bronze was in general use, bronze as well as wooden pegs being used in shipbuilding. Gold and silver had, however, long been known and worked, and Phœnician sailing vessels had chiefly contributed to their general distribution. It was by means of such sea traffic that the great civilizations were

made aware of each other's progress, and in some sense shared each other's discoveries. Phœnician ships were comparatively familiar objects from the shores of the Malay Peninsula to the coast of Spain, and even Britain, and the Phœnician ship-builders were rapidly superseding the Egyptians as the most expert in the world.

The inventors of the bireme and trireme—vessels propelled by two and three rows of oars-men respectively—they had developed marine architecture to such a point that what were known as the Tarshish ships were rapidly coming to hold a position in the world's shipping similar to that of the great East Indiamen of a later day. Taking over and improving the standard marine types previously evolved by the Egyptians, the Phœnicians produced the most easily manœuvred and fastest ships in the world—ships of a type that was afterwards adopted by both Greece and Rome.

Rome, at the time of the foundation of Carthage, had not been built, but the Greeks had already come upon the world's stage as the future challengers of Phœnician commerce and marine supremacy. In groups of fair-haired and vigorous barbaric invaders, they had for some generations been pouring down the Balkan Peninsula partly destroying, partly absorbing and partly transform-

ing the more ancient civilizations that they had found and overcome there. The first settlements in such towns as Athens, on the Hellenic Peninsula, and Ephesus, on the coast of Asia Minor, had already taken place, and during the next four or five centuries, as we shall see, Greek and Phœnician colonial rivalry became ever more acute.

Meanwhile, with the rise of what was then regarded by the Phœnicians as the colonial town of Carthage, the mother-land of Phœnicia had passed under the domination of the Assyrian empire, and was never destined again to attain its previous degree of independence and splendour. In spite, or perhaps because of this, the colony of Carthage went from strength to strength on its way to becoming not only the chief Phœnician city—the Manchester of its age, as it has been called—but one of the greatest cities of antiquity. When the Greeks of the sixth and fifth centuries before Christ began to threaten the wealthy Phœnician settlements in Sicily and Spain, it was to Carthage that these settlements turned for aid, and it was Carthaginian sailors who protected them. Apt and admiring pupils as the Greeks had been of Phœnician shipbuilding, seamanship and enterprise, and dovetailed as their colonies were, along the coast of the Mediterranean, with

those of their Phœnician contemporaries, the superior number and skill of the Phœnician sailors and the enormous advantage that they possessed in having so near and powerful a base in the city of Carthage were sufficient for many centuries to secure Phœnician supremacy in the Western Mediterranean.

Meanwhile, Rome was beginning to dawn upon the world as yet another possible competitor for empire, and in the year 509 B.C. an agreement was come to between the Phœnicians of Carthage and the newcomers whereby the domination over African waters was definitely assigned to the former and that of the mainland of Italy to the latter. Carthage was now practically independent of the parent-land that had founded it, and Phœnicia itself, after a period of Babylonian domination, had passed under Persian rule. Owing to a common enmity with Greece, and as the possessors of the enormously powerful and skilfully manned fleets of Tyre, Sidon and the other Phœnician harbour towns, the Phœnicians were treated with great respect by their Persian conquerors, and became loyal subjects of the great Empire of Darius and Xerxes. It was, indeed, largely owing to the sea-help given by the Phœnicians that these great Persian monarchs were enabled to transport their troops and to

unite under one supreme control the whole of Persia, Mesopotamia, Syria, Egypt and Asia Minor. That they failed to extend their domination into Europe was chiefly due to the fact that the Greeks, having learned from the Phœnicians the value of sea-power, had been wise enough to add to their natural courage and superior mental vigour a considerable degree of Phœnician sea-lore, and were thereby able to defeat the Persian and Phœnician fleet, in 480 B.C., at the decisive battle of Salamis.

With the centre of Phœnician enterprise shifted, however, to Carthage, the sea-mastery of the Phœnician sailors was still in the ascendant in Mediterranean waters, and during the ensuing period of Greek and Roman conflict the city of Carthage became rich beyond the dreams of avarice, while the Phœnician sailors regarded themselves, without question, as the unchallenged lords of the sea.

This was the great period of some of the historical Phœnician voyages; and, indeed, if Herodotus may be believed, a Phœnician fleet, dispatched under the auspices of King Necho of Egypt, had already, in 600 B.C., circumnavigated the African continent. The Phœnicians are reported to have sailed down the Red Sea, landing on the African coast in the autumn, and sowing

a crop of wheat which was afterwards reaped. They then continued their way south, rounded the Cape of Good Hope, sailed up the west coast of Africa, and, in the third year of their voyage, entered the Mediterranean through the Straits of Gibraltar, and so made their way home. From internal evidence there seems fairly good reason to believe this account.

Another remarkable voyage has been recorded by Hanno, a famous Carthaginian of 500 B.C., who wrote in the language of the Phœnicians, describing a voyage of exploration and colonization down the west coast of Africa, which brought the Phœnician expedition to Sierra Leone and Cape Palmas. This account was hung up in the temple of Melkarth in Carthage, a Greek translation of the work being made in 350 B.C. Almost at the same time another epoch-making voyage was made by a Carthaginian, Himilco, northwards along the west coast of Europe, in the course of which he seems to have visited Britain, and he makes mention of the Atlantic beyond.

Xenophon, in describing the organization of a Phœnician ship, reveals the high state of organization which was to be found in such a vessel:

"I think that the best and most perfect

arrangement of things which I ever saw was when I went to look at the great Phœnician sailing vessel, for I saw the largest amount of naval tackling separately disposed in the smallest stowage possible. For a ship, as you will know, is brought to anchor, and again got under way, by a vast number of wooden implements and of ropes, and sails the sea by means of a quantity of rigging, and is armed with a number of contrivances against hostile vessels, and carries about with it a large supply of weapons for the crew, and, besides, has all the utensils that a man keeps in his dwelling-house, for each of the messes. In addition, it is loaded with a quantity of merchandise, which the owner carries with him for his own profit.

"Now, all the things I have mentioned lay in a space not much bigger than a room that would conveniently hold ten beds; and I remarked that they severally lay in such a way that they did not obstruct one another, and did not require anyone to look for them, and yet they were neither placed at random, nor entangled with another, so as to consume time when they were suddenly wanted for use. Also, I found the captain's assistant, who is called 'the look-out man,' so well acquainted with the position of all the articles, and with the number of them, that even when at a distance he

would tell where everything lay, and how many there were of each sort. . . . Moreover, I saw this man, in his leisure moments, examining and testing everything that a vessel needs at sea; so, as I was surprised, I asked him what he was about, whereupon he replied: 'Stranger, I am looking to see, in case anything should happen, how everything is arranged in the ship, and whether anything is wanting, or to put to rights what is arranged awkwardly.'"

As time went on, with Phœnicia declining, and Tyre and Sidon dwindling into secondary cities under the Greek rule established by Alexander the Great in 334 B.C., Carthage was beginning to find itself more and more pressed by the growing strength and enterprise of the Roman Empire. Just as the Greeks had adopted, and in some respects improved upon, the sea-knowledge that they had inherited from the Phœnicians, so had the Romans also absorbed much of the knowledge and practice of the sea-crafts in which the Phœnicians had been the pioneers. Unspoilt as yet by the weakening influences of immense wealth easily gained, and strangers to luxury, the hardier Roman peoples were bound to challenge in time the all-embracing, and it must be confessed somewhat arrogant, rule of Carthaginian sea-power. The three Punic Wars were "inevit-

able wars" in these circumstances. The first lasted for twenty-seven years, from 268 B.C. to 241 B.C., and the Roman sailors defeated the Carthaginian fleets in the two battles of Mylæ and Ecnomus.

From the results of this war, however, Carthage recovered sufficiently to conquer Spain, and it was between the end of the first Punic War and the beginning of the second that the city attained perhaps its acme of prosperity. Its woven goods were transported in Phœnician vessels to all parts of the then civilized world. Slaves, ivory, precious stones, spices, and other African products were also transhipped to a hundred different Mediterranean ports, while the art of shipbuilding was carried to still greater perfection. The Phœnician triremes, it has been stated, were able to make a speed of 7½ knots, while many of them were manned by no fewer than 200 oarsmen, several men, of course, being necessary for the working of one of the huge oars. The ram on the bow—another Phœnician invention—was also in universal use now upon the warships of the Mediterranean empires, while the vessels were provided with fighting decks, and hung about with shields, made of iron, which had now become known to the civilized world.

At the end of the second Punic War, how-

ever, in spite of the amazing campaign of Hannibal, the Carthaginians lost their fleet and practically the whole of their overseas possessions. With the loss of their sea-power their sun began to set, and they never recovered their glory or prestige. At the end of the third Punic War, in the year 146 B.C., the Roman troops sacked and burned the city of Carthage, and though it later became an important Latin colony, and afterwards passed under the control of the Byzantine Emperors, it never assumed in after years its independent Phœnician character. Similarly, after nearly 300 years of Greek domination, the mother-country of Phœnicia passed into Roman hands, and became, in 64 B.C., part of the Roman colonial province of Syria.

The Phœnicians thus, in time, completely vanished as a separate people, but not before, as seamen, they had made world-civilization their debtors to an extent that it is impossible to overestimate. Apart from their seamanship, they were not perhaps such great originators as the peoples who had built up the Cretan, Babylonian, Egyptian and Greek Empires, but they had been the means of making general the local fruits of these great ancient centres of human culture which might otherwise have been lost. In the slow process of evolution from the earlier local or river

civilizations to the more general sea civilizations of which the Mediterranean was the great centre, the Phœnicians, in what would now seem to us their little ships, played a supreme part.

Though they passed away as an independent race, they left a tradition behind them that has never died out, and their imprint upon the art of shipbuilding is still to be traced to-day. In the arts of practical navigation no ancient people excelled them, and it was chiefly upon the basis provided by them that the great science of modern geography was founded.

CHAPTER III

THE BEGINNINGS OF GEOGRAPHY

Early Greek Geographers and their Ideas of the World—Centres of Culture in the Mediterranean—The Rise of Rome—The Rhodian Code of Laws—"Of Quarrelling, Fighting, and Striking"—An Egyptian Bill of Lading.

IF the Phœnicians were the first of the world's peoples to base their national life on a definite conception of sea-power in its modern sense, it is to their successors and disciples, the Greeks, that we owe the beginnings of scientific geography. Long before that, it is true, astronomy, as well as the deduction of the position and distance between one place and another, had been practised and brought to a great pitch of accuracy by both the Babylonians and Egyptians. A more or less efficient survey of land and property, for the purposes of taxation, had, for instance, been undertaken in Babylonia during the reign—somewhere about 4000 B.C.—of Sargon of Akkad, to whom reference has already been made, and in the British Museum there is a clay tablet of about 2000 B.C. which purports to represent lower Babylonia surrounded by water. In the Museum of Turin the

visitor can examine a map of the Wadi Alaiki, the site of the first known Nubian goldfield, probably dating from the reign of Rameses II, about 1300 B.C.

It would perhaps be stretching a point to call these the first maps known to us, but they are certainly evidences that a high degree of spade-work must have been accomplished many centuries before the Greeks had made themselves the greatest astronomers and geographers that the world had yet seen.

It was in the Greek seaport town of Miletus, in Ionia, a district of Asia Minor, that there came into being, during the sixth century before Christ, a great school of mathematical and astronomical learning. It was founded by the famous scholar, Thales, and one of his pupils, by name Anaximander, has been accepted by many—upon the authority of a later scholar, Eratosthenes—as the designer of the first map of the world. In his opinion the earth was to be regarded as the section of a cylinder, hung in the centre of the heavens. He conceived it to be circular in outline, and bounded, throughout the extent of its circumference, by water. He is also said to have been the first to introduce to Greek knowledge a rough instrument, known as the gnomon, by which it was possible to determine time and latitude. On

the other hand, Anaximander's pupil, Anaximenes, conceived the earth not as a circular plane —a theory of his master's which he rejected—but as an oblong of rectangular shape, supported in the midst of the heavens upon a sort of cushion of compressed air.

At about the same period, Pythagoras, a philosopher belonging to another Greek clan, the Dorians, who had settled in southern Italy, enunciated the theory that the world was, in fact, a globe revolving in space, together with other planets, round an invisible central fire, of which the sun's light was merely a reflection. Though this view was far more nearly correct than any held by his contemporaries, it was arrived at more or less accidentally, and along metaphysical lines, rather than as the result of exact scientific observations.

Though not perhaps strictly a geographer in the scientific sense of the term, yet by virtue of his travels by sea and land and his gifts as a writer and historian, Herodotus is perhaps the most prominent figure of the following century. Born about 484 B.C., he visited Egypt and Cyrene, then a Greek colony on what is now the coast of Tripoli, while he is believed to have extended his travels also as far as Babylon and the Euphrates in the East, and, crossing the Black Sea, to have explored its northern shore. He was also certainly

familiar with several of the Grecian islands, and, indeed, spent the latter part of his life in southern Italy. In his writings, however, he frequently refers to regions and their inhabitants far beyond the sphere of his journeyings, and it is interesting to gather from his reflections some idea of the extent and kind of world-knowledge possessed by an educated Greek between 400 and 500 years before the birth of Christ. He had heard of India, and of the river Indus, and he had a fairly accurate knowledge of what is now Persia, together with parts of Arabia. He refers also to various central Asiatic tribes, while, apart from his own knowledge, he seems to have gathered considerable information, either from seamen, traders or Greek colonists, as to a good deal of the country surrounding the Black Sea. He knew vaguely something of the character and course of the rivers Don and Dnieper, and he was also aware of the length and importance of the Danube, although he assigned to it an erroneous source in Spain. He had a dim conception of the Iberian and Celtic inhabitants of the regions lying to the north of the Straits of Gibraltar, and he had himself been up the Nile as far as the first cataract. He did not believe that there was any sea to the north of Europe, nor did he conceive that Africa extended farther south than the latitude of Cape

Guardafui. He also calculated that the earth was considerably longer from east to west than it was from north to south. Such was the world as seen through the eyes of Herodotus.

Perhaps the most interesting figure in the century that followed him was Pytheas of Massilia, another scientific sailor and traveller, and also incidentally the son of yet another seaport town. This was then a flourishing Greek colonial centre, now known to us as Marseilles, which had anciently been a Phœnician settlement before Greek occupation. A contemporary of Alexander the Great, it is probably this sailor of Marseilles who should be regarded as the practical discoverer of Britain; he also mentions the land of Thule, six days' voyage to the north, this being possibly a reference either to the Orkneys or the Shetlands or, more probably, to the Faröe Islands or Iceland. Pytheas also apparently gained some conception of the Baltic, if he did not explore it himself. A trained astronomer, he was one of the first travellers to calculate latitudes; he had, indeed, already—more than 300 years before the birth of Christ—estimated very nearly correctly the latitude of Marseilles, his native town. He had also made notes of the reported winter night and summer day of the Arctic world in the remotest north, and he made observations as to the

decreasing variety and yield of grain crops to be observed as the traveller approached less temperate regions.

While Pytheas was thus adding to the world's knowledge of itself in the west, the campaigns of Alexander the Great were visibly extending it throughout the east. Accompanied by trained measurers, known as bematists, who calculated the distances between various spots by carefully pacing them, Alexander not only rediscovered, for the Greeks, the ancient regions of Persian and Median civilization, but actually crossed the mountain range of the Hindu Kush, and followed the river Indus almost from its source to its delta, returning thence through the north of Baluchistan and Persia.

It was, however, to Eratosthenes, a colonial Greek scholar of Cyrene, in North Africa, who flourished about 200 B.C., that the science of geography, in its strictest mathematical sense, received its next great advance. This discoverer made a calculation of the circumference of the earth that was only about one-seventh greater than it has subsequently been found to be in fact. He was also the first, it is believed, to draw a map of the world, upon which he indicated seven parallels, based upon the few points of which the latitudes had been worked out by exact

observation, and also seven meridians at irregular distances from one another.

According to this map, what was thought to be the inhabited world was represented as an irregular island surrounded on all sides by water, while incidentally it showed Carthage, Sicily and Rome to be on the same meridian and the Caspian Sea to communicate with the Northern Ocean. In spite of his many errors, however, Eratosthenes was a patient and, as far as his lights went, exact observer, and he was followed, in about 150 B.C., by the celebrated astronomer, Hipparchus, who demonstrated that longitudes could be determined accurately by the observation of eclipses of the sun taken simultaneously at various places.

Rome was by now, of course, the transcendant power in the civilized world, and between the period of Eratosthenes and Hipparchus, and that of the next great figures in the geographical world —Marinus of Tyre and Ptolemy of Alexandria—it was destined to attain the climax of its power. In the year 146 B.C. Carthage was destroyed. Julius Cæsar was prosecuting his Gallic wars a century later. Egypt passed definitely into Roman occupation some thirty years before the birth of Christ, while Britain, apparently destined to play a very small part in the history of mankind, became a Roman colony some forty years afterwards.

During all this period there had been in what were the comparatively numerous centres of Greek and Græco-Roman culture great strides in every branch of science, and a much more accurate and widespread knowledge of the world's surface had been gained, as the result of the continual opening-up of new colonies and fresh overseas trading centres by enterprising seamen.

Amongst these centres of learning none had a greater reputation than Alexandria. This city was founded some 330 years before Christ by Alexander the Great; it was well situated on the coast of Egypt near the mouth of the Nile and was screened by Pharos Island. After the decline of Tyre as a trading city, it became the centre of traffic between Europe, Arabia and India, and in less than a hundred years had grown larger even than Carthage. Originally a free Greek city, it presently found itself, like Carthage, commanding one of the chief granaries of Rome, and in the year 80 B.C. passed formally under Roman jurisdiction.

Though Carthage became a great trading city, it did not lose its standing as a centre of scientific research and a repository of learning, and it was chiefly, perhaps, as the forerunner of Ptolemy of Alexandria that Marinus of Tyre owes his claim to fame.

Ptolemy's Idea of the World—A.D. 150.

Apart from this, however, he must be given the credit of having revivified the scientific methods adopted by Eratosthenes and Hipparchus, methods that had temporarily lapsed with the general decline of Greek learning in the first days of Roman subjection. It is, however, mainly from his successor, Ptolemy of Alexandria, one of the outstanding figures in the evolution of human knowledge, that we learn of his work, which was to be eclipsed by that of his disciple.

The practical founder of the great science of trigonometry and the enunciator of theorems that still hold good to-day, both in pure mathematics and astronomy, the work of Ptolemy was for all time. But it is as a geographer that he interests us. He regarded the world not only as a globe, but conceived its surface, even as modern geographers do, as divided by parallels of latitude and meridians of longitude, thus setting a seal upon and carrying on the earlier work of Eratosthenes and Hipparchus. With this arrangement of parallels and meridians as his foundation, Ptolemy then set himself the task of mapping out the world; and it is fascinating to trace the world's picture as it existed in the mind of this man of supreme genius only some 150 years after the birth of Christ.

As a study of his map will show, his ideas were,

in many respects, almost laughably erroneous. But in the methods that he followed he was laying down a track that has been followed by scientific geographers ever since. He was in large measure groping in the dark. In his day the exact latitudes of very few places, of which Marseilles, Rhodes, Alexandria and Rome were perhaps the chief, had been arrived at by precise observation. The knowledge of longitudes was even more vague, and of the three longitudes that had been laid down as the result of the simultaneous observations of eclipses he based his measurements, unfortunately, upon the least accurate. His map, consequently, shows the Mediterranean as too long, Africa as too wide, and Asia as enormously out of proportion in its eastward extension from Europe. He also converted the Indian Ocean into a vast inland sea by joining the south-eastern extremities of Asia and Africa, while of the Baltic he evidently had no knowledge, although his conception of the British Isles made some approach to accuracy. Nevertheless, thanks to the trade routes that had now been established between Arabia and China, he had a far more accurate knowledge than any of his predecessors of the great mid-Asian mountain ranges, although his idea of the southern contour of the Asiatic continent was in many ways wrong. With regard to northern Africa, his map again

shows a considerable advance of knowledge, pointing to actual civilized penetration of that continent. Like Herodotus, he seems to have abandoned the earlier belief in the circumambient ocean and to have assumed an extension of unexplored land in northern Europe and Asia to the east of China and to the south of Africa.

Such then, very briefly, was Ptolemy's geographical idea of the world in which he lived —a world of whose earlier cultures, and indeed in many respects of whose contemporary life, he knew far less, it must be remembered, than scientific research has enabled us to learn to-day. But it was nevertheless the most accurate and sane conception that had then been reached by civilized man; and though his work was destined to be forgotten for many centuries, it was eventually to be resuscitated and to form the chief basis of modern geography.

What is, perhaps, more interesting, however, at the moment is the fact that it had by now —A.D. 150—become possible and natural to talk of the civilized world. Owing to the continual and ever-growing cross-streams of sea-borne traffic, a phrase that would either have been meaningless or entirely local to a Sumerian householder of Eridu, or to an educated engineer engaged upon the Egyptian Pyramids, had now attained a

familiar significance. Thus a scholar of Ephesus, Miletus or Tyre, taking ship across the Mediterranean, could be reasonably certain of meeting a fellow-scholar with more or less the same standards of thought and conduct in such widely separated cities as Alexandria, Carthage or Marseilles, and it is impossible to over-estimate the world's debt, in respect of all branches of its knowledge, to the scholars and students produced by the international life of these early seaport towns thronged by merchant seamen.

By this time there had probably been established for many centuries that system of sea customs and traditions afterwards known as the Rhodian Sea Law. Gathering up arrangements that had probably been found convenient by the great Cretan and Phœnician communities, this law was afterwards consolidated under the ægis of the Eastern Roman Empire about the seventh century A.D., and is in itself evidence of a very high degree of nautical civilization, at any rate in eastern Mediterranean waters. It deals with the design, equipment, lading and upkeep of merchant vessels, and defines the trading duties of shipmasters and their men, the rights of merchants and passengers, besides laying down regulations in respect of salvage and demurrage.

Thus the shipowner and shipmaster were held

responsible for the seaworthy condition of the hull of a vessel, subject to various penalties to be incurred in the event of damage to cargo resulting from leakage; while, on the other hand, passengers, presumably owing to the danger of fire, were not allowed to fry fish on board! Merchants on hiring ships were further recommended to make sure that the vessels so chartered possessed strong sailyards, skins, anchors, ropes of the best quality, boats in perfect order, and suitable rudders.

Other regulations had to do with the accommodation of passengers, the sleeping space for an ordinary passenger being about 4 feet 6 inches by 1 foot 6 inches in modern measurements. A woman was allowed somewhat less than this, and a boy half the space occupied by a woman!

The sentiments expressed in articles "Of Quarrelling, Fighting, and Striking" would require little or no alteration in the twentieth century after the lapse of so many years:

> "If the mariners quarrel, let it be in Words; and let them not strike one another. And if any giving another a Blow on the Head, wound him, or hurt him in any other manner; he that give the Blow shall pay the

Doctor's Fees and all other Charges, and shall likewise pay his Hire for the lost Time, and tend the hurt Person during the Cure.

"If the Mariners quarrel, and one of them strike another with a Stone or Cudgel, and he return the Blow to him from whom he receiv'd it, that shall be deem'd to have been *Se Defendendo:* And tho' the Person last struck do thereupon die, it being prov'd by Witnesses that the Deceas'd did first strike the Survivor, either with a Stone, with a Stick, or with any Iron; he that struck and killed, shall be free from all Danger, for that the Deceas'd suffered himself only what he would have made another suffer.

"If any Master, Merchant, or Mariner strike a Man with his fist and blind him; or if by kicking him, he bursts his Belly; besides the Doctor's Fees, he shall pay twelve Nobles to the Person for the Loss of an Eye, and ten Nobles for the causing of a Rupture; and if the Person so struck decease, the Striker shall be punished with Death."

A further illustration of the established advance of general maritime order and amenity at a period anterior to the beginnings of authenticated British history is to be found in the appended

translation of an Egyptian Bill of Lading, of which the original may be seen in the British Museum:

"This Bill of Lading is given by Aurelius Heracles, son of Dioscorus an Antæopolis, master of his own ship, of 250 *artabæ* burden, without any figure-head, to Aurelius Arius, son of Heraclides, senator of Arsinoe (capital of Fayum) for the carriage of 250 *artabæ* of vegetable seed, to be conveyed from the haven of the Grove in the capital (i.e. Arsinoe) to the haven of Oxyrhynchus, the freightage agreed on being 100 clean silver *drachmas*, whereof he has received 40 *drachmæ*, and the remaining 60 *drachmæ* he is to receive when he lands the cargo; which cargo he shall land safe and undamaged by any nautical mishap; and he shall take for the journey two days, from the 25th, and likewise he shall remain at Oxyrhynchus four days; and if he be delayed after that time he, the master, shall receive 16 *drachmæ* per day for himself; and he, the master, shall provide a sufficient number of sailors and all the tackle of the ship; and he shall receive likewise for a libation at Oxyrhynchus one *ceramion* of wine. This Bill of Lading is valid.

"The third year of the Emperor Cæsar Gaius Julius Verus Maximinus, the Pious, the Fortunate, the August, and of Gaius Julies Verus Maximus, the most holy Cæsar, the August, the son of the August, the 22nd of Phaophi (19th October, A.D. 236).

(*Signed I, Aurelius Heracles, have made out this Bill of Lading and received the aforesaid* 40 *drachmæ on account.*"

Profoundly as the various Mediterranean cultures still differed, both in degree and kind, there had, therefore, now been established in all the countries bordering upon this central, land-locked sea a definite common factor of outlook and behaviour—a general code of human intercourse, to which there could now rightly be given the name of civilization. It was true, of course, that there still lived in the hinterlands great and vigorous barbaric peoples, who had scarcely as yet been influenced by this seacoast civilization. But though some of these were afterwards destined to invade, and even possess, the more cultured Mediterranean countries, the civilization that they found there had become too generally diffused and deeply implanted to be destroyed. And, indeed, it was to some of these conquerors, the Arabs, that the western world was to owe the revival, many

centuries later, of the submerged classical learning of Ptolemy and his fellows.

The second, or sea-stage, of civilization may thus be said to have been finally established. Those never-stopping shuttles of human knowledge, the obscure trading ships of the Egyptians, the Cretans and the Phœnicians, and, in later days, those of their successors, the Greeks and Romans, had woven a fabric of Mediterranean civilization that was to prove strong enough to survive all the chances and changes of time. Incidentally they had been preparing for the next great step in general social development: that ocean-civilization upon which human society rests to-day. This was, however, established by two main streams of marine enterprise, the older Latin stream with which we have been dealing, based upon the Mediterranean, and an even more vigorous one, to which we must now turn our attention, that built its first boats in river-mouths and fjords and navigated them off the stormy and inhospitable coasts of north-west Europe.

CHAPTER IV

SEA POWER IN ANCIENT BRITAIN

Early Scandinavian Sailors—Their Influence on Shipbuilding —Contrast between Roman and Western European Ships—Survival of the two Influences on Modern Vessels—Trade and Shipping in Saxon England.

WE have already seen that many centuries before the establishment of the Roman Empire and the geographical researches of Ptolemy, the Phœnicians had crept through the Straits of Gibraltar—the Pillars of Hercules, as they were called—and explored the coasts of Spain and France, the Scilly Islands and the southern shores of Britain. We know, too, that in the height of their fame they were, amongst other things, importers of amber from the Baltic, although most probably most of it was transported overland. It is, however, almost certain that they conducted a more or less sporadic and intermittent trade with the wild tribes inhabiting the Rhine and Elbe river-mouths, with Jutland, Denmark and southern Scandinavia. But the Phœnicians, always reticent concerning their overseas enterprise, had long since ceased to make these journeys.

As an independent sea and colonial power they had been overwhelmed by the successive rise of Greece and Rome, and the Greeks had for the most part turned their thoughts to the east, toward the riches of Asia and Egypt, rather than to the storm-bound coasts of northern Europe. It came about, therefore, that, to the Romans, north-west Europe was an unknown land to be discovered afresh, while the inhabitants of France, Britain and the Netherlands, to say nothing of the Scandinavian Norsemen, were far more remote and barbaric to the average civilized shopkeeper of Rome, Alexandria or Athens than are the natives, let us say, of New Guinea to the average Londoner to-day.

By the time, however, that Julius Cæsar began his campaigns in Gaul and made his first landing in Britain these coastal peoples had attained a degree of rough civilization, and in sea-lore and shipbuilding had already learned much that they could teach the Romans. Whether or not their knowledge and skill in this respect were the result of some primary stimulus received, centuries before, from visiting Phœnician mariners, or whether it had been evolved as the outcome of independent and vigorous minds working upon their own particular transport problems is uncertain. It was possibly a combination of the

two. But the fact remains, as Cæsar has revealed in his own records of his triumphs, that these so-called barbarians had already advanced farther in many ways than the people of the Mediterranean as sailors and shipbuilders.

This is a matter of little surprise in view of the circumstances. The Roman, or Mediterranean, school of navigators had been confronted with comparatively simple conditions, and that fact explains the more rapid growth of overseas commerce, and therefore of general civilization, in that part of the then known world. Operating upon an almost tideless sea, with storms far less frequent, severe, and prolonged than in northern latitudes, they had become expert in the rapid construction of ships chiefly depending upon oars, and whose primary aim was speed combined with a high degree of comfort. To what an extent the convenience of passengers had been studied can be gathered from the fact that in the second and third centuries after Christ, Roman vessels were afloat fitted with luxuriously appointed bathrooms, saloons decorated with paintings and statues, and provided with covered-in decks over which grew vines and climbing fruit trees. Two such galleys, each fitted with sixteen banks of oars, are recorded by Suetonius as having been built for the Emperor Caligula; they had gold-coloured

sails and poops encrusted with jewels. In these vessels he was accustomed to sail along the Calabrian coast, with musicians and dancers to entertain him and his guests.

The Norsemen, however—and it was they who set the pattern for most of the seagoing ships in use between the North Cape and the Bay of Biscay—found themselves faced with conditions in many respects totally different. Thus between high tide and low tide, their entire coast-line underwent a transformation, thereby introducing what was an almost unknown complication to the Mediterranean sailors. Then, again, the open Atlantic presented conditions far dissimilar from those of the land-locked Mediterranean. Its storms were fiercer, and safety was usually to be found out of sight of land rather than in the neighbourhood of rocky or sand-barred shores. Fogs were frequent, often persisting for many days. Winds were high and constant, and sometimes prevailed for weeks together. The end of shipbuilding, therefore, to the Norsemen was, first and last, seaworthiness—speed and comfort were quite secondary considerations. Their lives and welfare as traders depended on the first. Moreover, though the Norse vessels, like those of the Mediterranean, were primarily dependent upon rowers, it was upon the open waters of the North

Sea and the Atlantic that the sail began, as we have said before, to creep first to its ultimate ascendancy.

It is intensely interesting in these circumstances to read Julius Cæsar's record of one of the first clashes between these two schools of seamen. In his campaign with the Veneti, a Gaelic tribe of northern France, in the year 54 B.C., these seamen, comparatively barbarians though they were, used ships much more adaptable to the treacherously shoaled waters of the narrow seas than those of the Romans. With their much higher bows and sterns they were better suited to sustain the force of the waves of the northern seas. They were built throughout of oak, obtained, of course, from the seaside forests that were then growing thickly between the Baltic and the Bay of Biscay; their crossbeams were said to have been made of logs a foot thick and fastened with iron nails more than half an inch in diameter. Instead of the cables used by the Romans, their anchors were fastened with iron chains, while their sails, instead of being made of linen, were constructed of skins or leather. It was only in speed and skill in oarsmanship, according to Cæsar, that the Romans excelled; their rams were almost useless against the strongly built vessels of the northerners, whose high bulwarks proved a further obstacle to the

Roman soldiers. Moreover, whenever a storm arose, the ships of the Veneti were able to ride before the wind and weather with far greater ease than those of the Romans, and were also able to negotiate shallows that were often disastrous to the Romans.

These stout oaken vessels, with their high bulwarks, bows and sterns, and their shallow draught, had, of course, been built after a common pattern owing its origin, probably, to the Scandinavians, still farther north, for these fierce, blonde, blue-eyed, good-humoured mariners were already past-masters both in piracy and sea-exploration, roaming at will into every creek and estuary of the west coast of Europe and its island fringes. To them, as to the early Egyptians, their ships were almost equally living beings with themselves; and just as the Egyptians were frequently buried with little wooden models of their ships, so, after cremation, the ashes of the northern Vikings were often laid in boat-shaped graves or their remains were confided to the sea in their own ships, which were set on fire as a sort of magnificent funeral rite. In yet other cases they were buried in ships drawn up upon the beach, and afterwards covered in and protected by enormous earth mounds. It is from the excavation of such funeral mounds that we have obtained our most accurate knowledge of

what the Viking boats of this period were really like.

Dominating personalities as they were in the seagoing sense, there was, perhaps, little to choose between them and the tribes dwelling about the river estuaries and upon the tongue of land separating the North Sea and the Baltic. We learn from Tacitus that Germanicus had, in A.D. 15, built a thousand sharp-bowed ships near the mouth of the river Rhine, some with flat bottoms to enable them to be the more easily beached, and some capable of being steered both at bow and stern in order that they could be the more readily moved in either direction. Some of these vessels were decked in order to permit of the erection on board of primitive catapults. These vessels were almost equally adapted for oars or sails.

These, then, were the sort of estuary-dwellers, navigators, explorers, pirates and shipbuilders who were destined to become, during the next few generations, the conquerors of the British Islands; and it is perhaps time to turn to the consideration of Great Britain, within whose shores there was presently to be built up in the persons of the Anglo-Saxons—the English-speaking peoples—the chief creators of the third, or ocean-stage, of civilization.

To a certain extent the English were the pupils of both the great primary schools of seamanship, the Norse and the Mediterranean. It is still possible to discern, indeed, in the local shipping of these islands, the traces of that dual influence. The Deal galley may be regarded as more or less Roman, and derived, of course, by the Romans through the Greeks from the Phœnicians and Egyptians; while in the Norfolk wherry and the tanned sails of many of our east coast fishing fleets a Norse ancestry is visible. The welding process, however, was destined to take many centuries, although the island position of Great Britain was almost ideally favourable to its development. Upon the verge of what to the Europeans was then the unknown world, it was the inevitable goal of all the most adventurous spirits and skilful navigators of the Continent. Its population was thus continually being refreshed and invigorated by family and tribal strains in which the sea instinct was deeply implanted and of which sea prowess was the proudest tradition. Moreover, to the children of such families these islands naturally afforded an unequalled opportunity of acquiring and enlarging upon their forefathers' experience—an opportunity that was later on to develop into the primary condition of national existence.

During the three and a half centuries of

Roman colonization the chief commerce, of course, between Great Britain and the Continent was undertaken not in British, but in foreign craft. Indeed, the native vessels, perhaps even including those in which the Britons were recorded by Julius Cæsar as having helped the Veneti, were made, for the most part, of wicker and ox-hide. But throughout these centuries of Roman domination the seafaring peoples of the north were frequent visitors to these shores, either for purposes of genuine trade or more or less undisguised piracy. After the departure of the Romans these single spies, as it were, became the vanguard of successive fleets of navigators, and when the Saxons, Jutes and Angles, from the estuaries of the Weser, the Elbe, the Ems and the Rhine, descended upon the land, they naturally brought with them not only the Norse type of vessel, but their own peculiar phases of the arts of navigation and shipbuilding.

Within a few generations, however, these Saxon settlers became so engrossed with the task of developing and improving their island holdings that they lost, to a great extent, both their inclination for the sea and their aptitude as navigators; and in consequence they found themselves being more and more harried by the sea-worshipping Vikings of Norway, Sweden and Denmark.

These great sailors, who were already accustomed, without the aid of the compass and with only a rudimentary knowledge of navigation by the sun and stars, to make voyages as far afield as to the Faröe Islands, Iceland, the Levant, and even, it is supposed, Greenland, had already established a more or less regular trade-route along the west coast of England by way of the Shetlands, Orkneys and Hebrides to various Irish seacoast villages, and had penetrated as far south as the Bristol Channel. The principal product in which they traded was salt fish from Iceland and Norway to make good the usual spring scarcity of meat of all sorts in Saxon England, a trade that, later on, was to pass very largely into the hands of the English merchants of Bristol.

With the coming of Alfred a great effort was made to meet and beat the Danes upon their own element. At first this far-seeing monarch was obliged to recruit most of his oarsmen from the sea-going population of Friesland. Upon the fluctuating maritime struggles between the Saxons and Danes this is not perhaps the place to dwell. But from the time of Alfred onwards, until the Norman conquest, there was a continual, if small, Anglo-Saxon overseas commerce. Curious evidence of this occurs in an ancient Anglo-Saxon dialogue, in which a merchant is cited as declaring

that he is "useful both to the King and his nobles, to rich men and to common folk; that he enters his ship with his merchandise and sails across the seas to sell his merchandise and to buy there things that are not produced in his own country, to bring them back, with great danger, for the peoples' good. He brings," he is made to say, "skins, silks, jewels and gold, garments, pigments, wine, oil and articles of ivory, glass, silver and metal."

In exchange for these luxuries the Anglo-Saxon merchants chiefly carried in their little vessels English sheepskins to be converted into cloth by the more skilful Flemish and Continental weavers. There had probably, however, also taken place a certain revival in the oldest English exports of tin and lead, as well possibly as of that Staffordshire pottery which used, in the days of the Roman occupation, to find its way to Italy. We hear, too, of a celebrated Anglo-Saxon merchant of the name of Bolto who had settled and made a great name for himself in Marseilles—that ancient trading centre to which we have already referred in previous chapters.

As evidence of the activity of these early tramp ships, we have the record that King Athelstan, Alfred's grandson, conferred the dignity of Thaneship upon any merchant who had made

three long voyages in his own trading vessel, and that Edgar, his nephew, was so fond of the sea that, as Hakluyt tells us, "his sommer progresses and yerely chiefe pastimes were the sailing round about this whole Island of Albion garded with his grand navie of 400 sails at the least, parted into 4 equall parts of petie navies, eche one being of 100 ships, for so it is anciently recorded." These ships were still, of course, mainly of the Norse type of small size.

The Roman, Saxon and Danish contributions to the sea-life of the coming English-England had already been absorbed and largely blended into a characteristic and individual whole. With the yet further, and as it was to prove, final invasion of Norse influence, by way of France, in the persons of the Normans, it was to receive the last of its foreign elements and thenceforward to develop, sometimes by stages of almost imperceptible growth, and sometimes by what apparently were amazing strides, into the most influential of all the world-influences at sea.

CHAPTER V

THE GREAT TRADE ROUTES

The Fusion of Races in England—Edward III as "Lord of the Seas"—The Great Mediæval Trade Routes—Activities of the Hanseatic Groups—The Rise of British Trade—Establishment of the Guilds—Progress in English Shipbuilding.

ALL the chief component strains of what was to produce the characteristic English-speaking sea-race had by the twelfth century been absorbed into our island life, but the slow processes of fusion had to be more or less completed before any growth of English sea-power could be recognized. Indeed, it was not until the naval victory of Edward III, in 1340, at the Battle of Sluys and his subsequent blockade of Calais with 700 English ships—merchant ships, of course—that Great Britain established a recognized claim to be one of the maritime countries of the mediæval world.

With the Battle of Sluys Edward III claimed the title of Lord of the Seas, referring chiefly to the southern half of the North Sea, the Straits of Dover and the English Channel, and demanded the vailing of topsails on the part of all other ships

when meeting vessels flying the English flag. This claim was not only generally conceded, but continued to be observed for nearly three hundred years afterwards.

But it is not with naval prowess that we are mainly concerned, although this was largely won, of course, for many centuries, by what were in reality merchant vessels; and in considering the peculiar development of the British tramp ship, and its subsequent multiplication into a definite mercantile marine, it is necessary to go back for a moment and consider the progress of English overseas commerce during the three centuries following the Norman Conquest.

With the character and extent of Saxon sea-borne trade before this event we have already dealt briefly in the last chapter. It was inevitable, of course, that during the troubled days immediately following the Norman invasion this trade should have suffered a considerable set-back. At the same time it must be remembered—and this applies equally to the long centuries epitomized in our first three chapters—that the ordinary everyday mercantile life of almost every country was little affected by the great military and naval convulsions that loom so large in history. Throughout the difficult years when the Norman and Saxon elements of the population of England

were being blended into a self-conscious race of Englishmen, individual traders and groups of traders were quietly pursuing their maritime activities.

Notably during the stable and progressive reigns of Henry I, Henry II and Edward I did England begin to acquire its definitely English character, not only in matters legal, social and literary, but also in trade and commercial tradition.

In a previous book[1] we have already drawn a brief picture of this little, self-sufficing England, with its population, almost wholly agricultural, of scarcely three millions, its loosely linked manorial communities, its rude, unwindowed houses, its great tracts of undrained swamps, its rivers for the most part without bridges, and its many great tracts of country innocent of anything that could be called a road. In such a small, relatively primitive, and economically independent community both imports and exports were naturally upon a restricted scale; the former consisted almost entirely of articles of luxury in the way of clothing, armour, wine and fish, and the latter were practically confined to wool. Most of the overseas trade, therefore, was in the hands of foreign rather than English middlemen and

[1] "The Sea Traders."

merchants, and the great bulk of it was carried in ships that were not English.

A further reason for the comparatively small part played, at this time, by English merchant seamen in the world's trade was the fact that these islands still lay beyond and outside the main lines of international traffic. They were situated beyond the chief termini of the defined and generally used trade-routes that had by now come into being between Asiatic countries and western Europe.

Of these mediæval trade-routes and commercial centres there were some of outstanding importance. The great Russian mart of Novgorod drained the north and north-east of Russia and the little known north-west of Asia; and merchandise, consisting chiefly of wax, furs and timber, was thence transferred to the Baltic ports of Riga, Danzic and the like for further overseas distribution. Then, again, to the south there was a great route from the eastern and mid-Asiatic countries via Astrachan and the Caspian Sea, the river Volga, Moscow and thence to the various Baltic ports. Farther south still there was a well-marked route connecting Ispahan, Tabriz and Trebizond, on the Black Sea, with another great Russian mart, that of Kief, from which the streams of commerce again radiated to the great North German and Flemish

trading sea-coast cities. From southern Asia Arabian shipping, which had by this time become very active in these waters, brought the fruits, silks and spices of India and the East Indies up the Persian Gulf and the Red Sea for transport, by way of Bagdad and Mozul, to the Syrian sea-coast towns or to Alexandria in Egypt, whence they were carried across the Mediterranean to such rich and powerful trading centres as had been established in Venice and Genoa. From these places they were either carried northwards through the Alpine passes or transhipped by the longer sea-route through the Straits of Gibraltar.

Continental merchants at this period were favoured by their strategical position, either at the Continental termini or at some midway depôt of these established and long-recognized thoroughfares of commerce, and the trade of England was almost wholly controlled by groups of these agents or middle-men. Of these, the three principal were known as the Hanseatic groups, there being a Hansa of Cologne, a Flemish Hansa of London, and a German and Baltic Hansa, eventually by far the most powerful of the three.

The Hansa of Cologne, so far as it dealt with England, was chiefly concerned with Italian exports, such as wine, transported overland from Italy to the Rhine, and thence borne in Hanseatic

ships to this country. This comparatively small Hansa was eventually adversely affected by the increasing adoption of the sea-route to England via Gibraltar and the Bay of Biscay, and was ultimately absorbed by the German and Baltic Hansa of the Easterlings, as its members were then popularly known.

The Flemish Hansa of London existed chiefly as a medium for the selling of the fine cloths woven by the craftsmen of Flanders and north-east France, as well as for the metal articles and elaborately wrought and decorated armour of which they were expert manufacturers. But as a separate Hansa this organization did not survive very long, although there was for many generations a brisk trade between the manufacturers of these parts and Great Britain.

By far the most powerful, prosperous and extensive of the Hanseatic groups was that of the German and Baltic merchants, controlling as they did the great stream of eastern produce flowing through such markets as those of Kief and Novgorod to the ports of Danzic, Lübeck, Bremen and Hamburg. Indeed, at one time, no fewer than eighty-six cities, with independent commercial privileges, were embraced in this league, whose fleet was the greatest in northern waters, and proved for many generations the chief obstacle

to the development of the mercantile marine of the British Islands.

As in later days such English trading companies as the East India Company had their stations or factories in the Far East, so these Hanseatic merchants had their station or factory in London, where permanent representatives of the league lived in a house, subsequently known as the Steel House, built upon the site now largely occupied by Cannon Street Station. It was a very strong building, as it had need to be, in view of the frequent assaults made upon it owing to the jealousies of the London merchants and their apprentices, and within it these foreign factors lived a life of almost monastic discipline and strictness. Marriage with an Englishwoman was absolutely forbidden, and none of its residents was permitted to sleep elsewhere than within the walls of their peculiarly ordered domain. It was, indeed, practically a city within the City of London.

In addition to these great Hanseatic combinations, however, there were other groups of foreign merchants whose influence on English trade was very considerable. Amongst these were the Lombards, who largely succeeded to the money-lending and banking business which had previously been carried on by the Jews. London still has its

Lombard Street. Another group consisted of Venetians, Venice being at this time perhaps the richest and most active commercial city in the civilized world. Both by land and sea these Italian merchants had been conducting trade with England in Saxon and Norman times; but about the year 1317 these islands were included in an annual trading expedition organized by the Venetian Government. Assembled in a fleet of four or five large vessels, known as the Flanders Galleys, and under the official protection of the Venetian Government, the produce thus ventured by the various participating merchants was, as it were, hawked round western Europe. Such towns as Messina, Naples, various ports in Spain and Morocco, as well as Lisbon, were yearly visited before the fleet halted in the neighbourhood of the Cinque Ports of Great Britain; portions of it then turned aside to trade with English coast towns, including Sandwich, Southampton and London, while others proceeded to trade with the great commercial cities of Flanders and the Netherlands.

With their cargoes of woven cloths and silken goods, damasks, satins, oriental spices and drugs, they thus brought to the shores of England the distant wares of India, Persia and Syria, returning with the raw wools, ox-hides, tin, pewter and

pottery that then formed the bulk of English exports.

It must not be thought from all this, however, that the domestic trade of these islands by sea was wholly negligible. In a country whose people had been recruited from such various and vigorous strains of seafarers this would have been impossible, and the maritime efficiency so strikingly demonstrated at the battle of Sluys and further exhibited in the blockade of Calais in the reign of Edward III was not the sudden growth of a night.

In the face of very considerable opposition from the powerful Hanseatic groups, and without much financial encouragement at home, English trade was beginning to make its way in most of the channels open to it. English merchants, as we have already mentioned, were, for example, increasingly sharing in the fish-carrying business between the Scandinavian islands and the west of England ports. Again, during the reign of Henry I, partly owing to the immigration of craftsmen from Flanders, a home industry in cloth manufacture began to make its appearance. The goods produced at first were, of course, extremely rough and quite unable to compete with the experienced work of the Continental weavers. But a market began to be found for them in northern Scandinavia and amongst the fishing

populations of the Faröe Islands, Iceland and the Hebrides.

From their own and foreign seafarers in tramp ships, the islanders learnt much of the outside world and its ways. Realizing the advantages that the Continental traders obtained from their powerful combinations, the first associations of British craftsmen and merchants soon came into being. Men of a like "mystery," as a craft was then frequently called, united themselves together for the furtherance and protection of their interests, for self-education, and for a kind of rough insurance. Guilds such as the Grocers, the Mercers, the Goldsmiths, the Skinners and so on were already so strong in the reign of Edward III that they received the concession of being appointed the electors of the chief city officers, besides possessing the right of nominating certain Members of Parliament.

Of these associations, perhaps the oldest of all was that known as the Merchants of the Staple, so called because they were exporters of the staple wares of the country. Acting, in the first place, as middle-men between the agriculturalists and the foreign cloth-makers who came to purchase wool, they presently formed depôts or factories, similar to those of the Hanseatic towns, not only in England, but abroad; and, until they were more

or less superseded by the later Fellowship of the Merchant-Adventurers of England, they were a very real and fruitful influence in the early growth of English trade overseas.

The bulk of the foreign trade of England was nevertheless still carried in Continental vessels. But the proportion of English-borne exports and imports was steadily growing and the arts of navigation and shipbuilding were vigorous in a hundred flourishing harbours—little more than villages, of course—round the coast. Of these, the most important, from the strictly technical point of view, were still the Cinque Ports, consisting of the towns of Hastings, Romney, Hythe, Dover, Sandwich, Winchelsea and Rye. This little group of south-eastern harbours had for a long time been accorded special privileges in respect of their shipbuilding and maritime activities. Long before the time of Edward III's naval victories, to which they greatly contributed, they had exercised what was perhaps the strongest influence on the maritime growth of these islands. In the reign of Edward I, in consideration of exemption from certain taxes and tolls, and the grant of their own civil and criminal courts of jurisdiction, they were required to provide 57 ships for 15 days each year, each ship to be provided with 21 men and a boy, "transport and the safe conduct of the king's

own person or his armies across the Narrow Sea" being required in return. These merchant seamen supported Edward I in his campaigns in Wales with a considerable fleet in the year 1277, while in the year 1293 they waged a sort of independent sea-warfare against the sailors of Normandy.

That, apart from these ports, there was, however, a vigorous seafaring population all round the coast is made clear from the roll of vessels serving in the blockade of Calais, already mentioned. Of the 14,000 English sailors then assembled, Yarmouth contributed 1,057, Fowey 770, Dartmouth 757, London, Bristol and Plymouth from 600 to 700 respectively, and such widely separated harbour towns as Looe and Newcastle from 300 to 400.

The progress of shipbuilding during the three centuries following the Norman Conquest, of course, to a certain extent lagged behind that of the Continent, and especially behind that of such great Mediterranean seafaring republics as Genoa and Venice, to be considered in the next chapter. The crusading fleet of Richard I consisted very largely of vessels of the one-masted Viking type, with high stern-post and clinker-built sides. Although it is doubtful whether any large proportion of Richard's fleet was actually English built and owned, it was certainly representative

in these particular respects of English shipbuilding generally.

As in many other ways, however, so in that of shipbuilding the Crusades were to prove of very great educational value. They revealed, for example, to the large and mixed company of Englishmen that accompanied the king, the existence in the Mediterranean of new and valuable types of vessels largely evolved, of course, from the original Egyptian, Phœnician and Roman patterns. These newer types were divisible into two main classes, one which had been evolved from the rowed galley, especially of the warship build, and the other which had been developed from the more beamy and less speedy, but perhaps more seaworthy, merchant vessel of earlier days.

It was this latter type, including what were sometimes called the caracks, caravels and barques, that was the most important, and from which descended the sailing ships that afterwards made the first great trans-oceanic voyages. Already, indeed, three-masted vessels of this type were in existence, one of which, in the hands of the Saracens, caused considerable trouble to King Richard's English sailors owing to its great bulk and strength and its carrying capacity of 1,500 men. The existence of Mediterranean vessels with

fighting tops on the masts and towering stern-castles and fore-castles, from which archers could shower down arrows upon the attacking vessels, was an unpleasant surprise to the English sailors.

English shipbuilders were, however, quick to learn lessons from the tidings brought home by their crusading comrades and from such personal knowledge as they soon began to gain from actual experience of merchant trading vessels. By the reign of Edward I we find the two-masted ship, steered by a permanent stern rudder, fairly common, while at the time of the Battle of Sluys English vessels of from 200 to 300 tons were frequently to be met with. It was not uncommon for the voyage from such harbours as Yarmouth and Lynn to Iceland to be performed in from two to three weeks.

CHAPTER VI

THE END OF AN AGE

Roman Contributions to Geographical Progress—Submergence of Greek Learning—The Rise and Spread of Arab Culture—Some Early Mediæval Voyages—The Eclipse of Scientific Geography in Western Europe—The Dawn of the Renaissance.

THE second, or sea-stage, of civilization was now drawing toward its end, and England was rising to maritime power. It may not prove unprofitable, therefore, to glance at the general position in respect of man's knowledge of the world, to which merchant seamen had contributed so much. In the thousand years and more that had lapsed since the great geographical work of Ptolemy and his associates, to what extent had the civilized races of mankind progressed in their conception of the world's extent and the utilization of its resources?

In many respects they had advanced little, and certainly much less than might reasonably have been forecasted in view of the great progress in sound scientific observation already made in the great Greek centres of learning. In such exact sciences as astronomy, pure mathematics and

geography, instead of development, there had been definite retrogression. For this, of course, there were various contributory causes, both political and intellectual, as will be obvious at once on recalling the outstanding events in the history of the Mediterranean civilization during this period.

The Romans, for example, in spite of their notable contributions to such practical arts as road-making, local surveying, engineering and civil government, had never exhibited in any great measure the Greek genius for learning in general. By their world-wide and methodical conquests, and the development of their system of colonial administration, they had created channels whereby such Greek thought as they themselves had absorbed became diffused amongst the more barbarous peoples whom they had subjugated and amongst whom they sojourned. But their personal domination, together with their own characteristic mentality, were on the whole unfavourable to the further flowering of the Greek forms of learning, although these still lingered in that eastern part of the great empire which, after the onslaught of those hinterland European tribes to whom we have already referred, became a separate portion of the Roman dominion, centering about Byzantium, later on to be known as Constantinople.

Moreover, with the growth of Christianity throughout the Roman Empire—then beginning to show signs of decay—the attention and interests of scholars became attracted, perhaps naturally, rather to theological than to scientific questions. The first ardent expositors and missionaries of this new and transforming faith, perhaps inevitably, regarded the scientific achievements of the earlier pagan teachers with distrust and hostility. Much of their work had, therefore, become submerged or distorted even before the great descent of the Goths, Visi-Goths, Vandals and other Central European tribes had swept away the great Roman Empire of the west.

Nor can it be regarded as surprising that, in view of this great heathen invasion of Italy, Spain, Gaul and Britain, to say nothing of the northern African Roman colonies, the scattered and dismayed Christian scholars discerned their chief and indeed overwhelming task in the conversion of these new masters of the West. The old and exact learning of such mental giants as Ptolemy, Marinus of Tyre, and Hipparchus retreated more and more into the obscurity of an almost legendary past. Profound as is the debt of western European civilization to the earlier monks and priests of the Christian Church for the preservation and dissemination of any of the older learning

at all, they were not the sort of men, nor were their circumstances propitious, for the revival, to any great extent, of dispassionate scientific research.

How far, in the art of geography, civilization had slipped back can be gathered from such typical surmises about the world as those of Cosmas Indicopleustes, formerly a merchant of Alexandria, but later a monk, who, during the sixth century of the Christian era, wrote a work entitled "Christian Topography." The inhabited world was described as a flat rectangular oblong, with oceans all round it. To the north of it was a large conical mountain, round which the sun—some forty miles in diameter—revolved, its orbit during the summer being round about the summit of the mountain, so that it was hidden from the earth for a shorter time each day than when it revolved about the base during the winter months.

The map of Beatus, a Spanish priest of the eighth century, shows to what a great extent theological ideas had influenced speculation in regard to geography. In this map the inhabited world is shown as surrounded by water, in which more or less symmetrical islands are placed in a ring. The Caspian Sea becomes a gulf opening into the north-eastern portion of this ocean, the

figures of Adam and Eve in Paradise being depicted in the Far East. Even in such a map as the famous Hereford map of the year 1280—nearly a century after the signing of the Magna Charta—the theological influence can be observed in the central position allotted to the Holy City of Jerusalem, and it is interesting to compare this astonishing piece of cartography with the forgotten map of Ptolemy, drawn more than a thousand years before.

Such was the condition into which scholastic geography had fallen in western Europe, although the idea of the world as a sphere had not completely died, and it was largely due to the wholly unforeseen and amazing intellectual efflorescence of the Arabian-born empire of Mahomet that the ancient culture of the Greeks was once more made available to Western students. Never quite forgotten in the scarred and harried remnants of what had once been sea-coast university towns of the eastern Mediterranean, and precariously surviving in the eastern Roman Empire, whose primary basis, of course, had been Greek, the Moslem rulers of the seventh, eighth and ninth centuries welcomed this older knowledge with open arms. In that astounding empire born in a generation out of the brain of Mahomet, which was to extend, in a little over a century, from the river Indus and

the verge of China to the Atlantic coast of Spain, such cities as Damascus and Bagdad, in the east, and Cordova, in the west, became the educational centres of the world.

So utterly has this Arabian Empire now been obliterated as a factor in the world's present progress that it must be difficult to realize that we owe to it, amongst other things, the numerals in everyday use, the whole art and science of algebra, the art of spherical trigonometry, the introduction of paper (probably from China), and the mechanical principle of the pendulum. The Arabian city of Bagdad is stated, indeed, at one time to have contained no fewer than two million people, embracing many of the most illustrious scholars of the world, and even the great Charlemagne in Europe was fain to own in its ruler, Haroun al Raschid, a contemporary potentate as illustrious as himself.

To this great Caliph of Bagdad, had they ever met, the European emperor would probably have seemed an almost wholly uneducated barbarian; and it was to a somewhat later Caliph of the same city—then the capital of the Arabian Empire—that we owe the translations of Ptolemy's astronomical and geographical works, as well as those of Marinus of Tyre, which were afterwards to become the foundation upon which Western

geographical scholars once more began to build with exact and scientific accuracy.

The Arabs during this period were, indeed, all things considered, the world's most vigorous and enlightened travellers. We have the record, during the life-time of Mahomet, of an Arabian voyage from Yan Tu, which was the port of Medina, on the Red Sea, to Canton, in China. Other Arabian travellers of the ninth and tenth centuries were Suleiman and Masudi, who made trading voyages to India, Ceylon, China, Madagascar, Syria and Egypt. Not very expert as map-makers, these Arabs, with their deep appreciation of the old Greek learning, were extraordinarily good astronomers.

During the long centuries, however, throughout which geographical science, like most other forms of learning, had been eclipsed in Europe, the practical sailor, the local tradesman and the larger sea-coast and trans-Continental merchants had been going their ways despite tottering thrones, submerging civilizations and newly arisen barbaric rulers. During these troubled times, as we have pointed out, great lines of commerce had been slowly established, and, indeed, the political unrest, the marching to and fro of various armies and the coming and going to all parts of Europe and Asia of Christian and Moslem educated missionaries had

built up a new and enormous, though uncorrelated, volume of practical geographical knowledge.

To one or two of these earlier travellers we have already referred. But there are others who should at least be mentioned in that they were the more conspicuous of the forerunners of that great and surprisingly sudden movement that led to the establishment of the third, or ocean-stage, of the world's civilization. There was the remarkable journey, for example, undertaken during the middle of the thirteenth century by the Italian missionary, Joannes de Plano Carpini, who headed a mission from Pope Innocent IV to the Mongols, who had then just established the vast Mongol Empire that at one time reached from Poland to the Pacific. Soon afterwards a Franciscan monk, William of Rubruquis, went on a mission to Tartary at the request of King Louis IX, and the result of his travels was to a large extent incorporated in the remarkable work of his fellow-Franciscan, Roger Bacon, that strange and solitary scholar of our English race, who revived the earlier Greek opinion as to the world's spherical form and foreshadowed, amongst other things, propelled vehicles, and flying machines guided by a single human pilot. Another noteworthy expedition was that of Hayton, King of Lesser Armenia, who, during the same century, visited Samarkand,

Bokhara, Merv and other parts of northern Persia.

Perhaps, however, the most remarkable trio of all were the three Venetian travellers, Nicolo, Maffeo and Marco Polo, the last-named being the son of Nicolo. The two elder of these had already, before Marco's birth, visited China and established cordial relations with the great Kublai Khan. This enlightened Mongol emperor had then sent them back to Europe in order that they might return with a further and larger embassy to his court from the Pope of Rome, thereby placing him in touch with Western civilization and Christian modes of thought. In the year 1271, therefore, they returned by a route that covered the Pamirs, Kashgar, Yarkand, Khotan, Lop Nor and the Gobi Desert. Back again in China, the young Marco made many friends for himself at the emperor's court, and was, on one occasion, employed on a mission to the Indies.

It was not, however, until the year 1292 that it became possible for him to return home, when he accompanied a returning foreign embassy by sea, voyaging by way of Sumatra and India. The journey took three years, and three years after his return Marco was captured by the Genoese, then the great rivals of the Venetians. While in jail his geographical experiences were written down at

his dictation by a fellow-captive. His descriptions of Pekin and the enormous wealth and comparatively high degree of civilization of China, his tales of Tibet, Burma, Siam, Cochin China, Japan, Java, Sumatra, the Nicobar and Andaman Islands, Ceylon, India, Abyssinia, Zanzibar and Madagascar, together with the legends that he reported of Siberia and the Arctic, were at first looked upon with half humorous unbelief by the majority of his fellows, although the story of his travels became an exceedingly popular one. Later reports, however, were to confirm in no slight degree the accuracy of his observations, and old Chinese documents have since been unearthed referring to the diplomatic missions in which Polo was engaged.

Polo survived until the fourteenth century, in which period another outstanding traveller and explorer was Batuta. A native of Tangiers, he seems to have travelled continually for some thirty years, during which he wrote what has since been proved to be extremely interesting and accurate accounts of Egypt, Arabia, Syria, Persia and Asia Minor, together with the countries lying about the Caspian and the Black Sea. He also voyaged, probably in Arabian trading ships, to India, the Maldive Islands, Ceylon, Sumatra and China, while later on he visited Spain, and even reached Timbuctoo.

That all these accumulating individual experiences were not universally available or more fruitfully co-ordinated was due largely, of course, to the fact that the majority of contemporary sailors and merchant-seamen were not scholars; to the perils, in such fluctuating times, besetting manuscripts of all sorts; and to the fact that the art of printing had not yet been developed to aid in the diffusion and adjustment of this great bulk of new geographical observation. Nevertheless, thanks to the incessant sea-going of ships of all sorts—mostly for trading purposes, though frequently, of course, for war—a new knowledge at any rate of the European and Asiatic world had definitely arisen, and there had begun to appear once more in the Mediterranean the shoots of another characteristic sea-society—the Venetians.

Founded during the fifth century—after the break-up of the Roman Empire, that is to say, into its eastern and western divisions—Venice originally represented a little Latin community standing at bay amidst the northern Adriatic islands before the great invasion of the northern barbarians. Here, amongst the bays, shallows and lagoons with which they were so familiar, they found it comparatively easy to maintain their individuality, and gradually laid the foundations of that insular

and overseas commerce upon which their future opulence was to rest. Like Genoa, upon the opposite coast of the peninsula, they became increasingly a sturdy, efficient and jealous republic of sea-going and sea-supported merchants. Advantageously placed between the eastern Roman Empire, with the wealth of Asia beyond it, and the newly organized kingdoms of western and north-western Europe, the Venetian Republic soon became so powerful and wealthy that it was able to defy even such a conqueror as Charlemagne and for many generations to hold the balance of power in south-eastern Europe. Throughout the later part of the ninth and the earlier part of the tenth centuries Venice succeeded in maintaining herself against the pressure of the great Moslem expansion, which we have mentioned above, as well as against various assaults by Huns, Slavs and other jealous competitors for her increasing treasures, and presently, after the habit of the earlier Phœnicians and the contemporary Hanseatic merchants of the north, began to establish her own commercial embassies or factories in the chief foreign towns with which she traded.

How rapidly she had advanced in the art of building big ships we have mentioned in connexion with the Crusades, and from the vast

amount of traffic which these expeditions to Palestine brought about she contrived to exact a very substantial tribute. It was true, of course, that during the eleventh century she came into collision, not always successfully, with some of those Norse adventurers who had sailed round into the Mediterranean to establish themselves in these warmer waters, but the local successes of these visitors had no very marked effect upon her general progress in wealth and influence. She became, in fact, in the maritime sense, the forefront of Western civilization, especially after the older Arabian Empire had been shattered by the rise of the Ottoman Turks.

Originally a little handful of primitive Moslem families driven south and west from their central Asian highlands by the great Mongol invasion, these Ottoman Turks had in time become the chief Moslem power in the world, and at last threatened the slowly recovered civilized life of Europe itself. In the year 1455, less than a century after the Battle of Sluys, they stormed Constantinople with Mahomet II at their head, and finally shattered for ever the last remains of the eastern or Greek half of what had once been the great Roman Empire. Having thus established themselves behind the Dardanelles, the Turks began to build up a great navy, and it

soon became evident that it was chiefly upon the sea-traders of Venice that the safety of Christendom rested.

With the details of the great struggle that ensued, lasting for many years, it is unnecessary to deal. At the Battle of Lepanto, fought in October, 1571—seventeen years before the defeat of the Spanish Armada by English seamen—the Turks were utterly defeated by what was in fact a polyglot assembly of Christian merchant-seamen under Don John of Austria. This was one of the decisive sea-battles in the history of the world, and finally secured European civilization against further aggression from the Ottoman Turks.

Long before this, however, there had definitely begun, after the profound eclipse following upon the fall of Rome, that astounding intellectual revival of the West comprehensively known as the Renaissance. It occurred chiefly amongst the Mediterranean peoples, but with responsive manifestations in almost every European country. Everywhere in the West humanity seemed to be suddenly exalting in a new and spring-like sense of growth and freedom. In every art and science discovery followed discovery with an almost bewildering rapidity.

The learning preserved and added to by the older Moslem Empire, overwhelmed in the East

and broken in the West, had been snatched torch-like by the scholars and craftsmen of a hundred Italian, French, Flemish and English cities. Already, a hundred years before the sailors of the West had saved Europe from the Turk, Caxton had set up the first printing press in England. Forty years later Luther had definitely placed himself at the head of the movement known as the Reformation. Less than thirty years after this was published the epoch-making work of Copernicus, "De Revolutionis Orbium," in which he put forward the theory of the spherical earth's revolution round the sun. Not even the *autos-da-fé* of Spain, the terrorism of Alva in the Netherlands nor the martyrdoms of Smithfield Market could stem the desire for intellectual liberty in every field of art and science.

Presently, as we have seen, it was the men of the sea who were to stand as the guardians of this new knowledge against the onslaught of the Ottoman Turk. But they were to do more, for to this suddenly revivified world of Michael Angelo and Leonardo da Vinci, Raphael, Luther and Copernicus, and a host of new and ardent leaders, they were now to make the gift of vast and undreamt-of continents, rich with uncomputable treasure.

CHAPTER VII

THE INVASION OF THE OCEANS

The Dawn of Ocean-civilization—The Rise of Portugal's Overseas Empire—The Achievements of Prince Henry the Navigator, Son of an English Mother—The First Crossing of the Atlantic—Spain as a Sea Power—The Progress of Scientific Geography—Mercator's Map.

THE extent to which the trading or tramp ship contributed both to the building-up and the preservation, especially in Europe, of the second or sea-stage of the world's civilization we have already indicated; it was the principal means of communication between the nations, for in those far-off days the vessel devoted exclusively to the conveyance of passengers was unknown. For the inception of the third, or ocean-stage, the tramp ship may be said to have also been almost wholly responsible. Although to a great extent, of course, this was, in the first instance, the work of the older Mediterranean school of seamen, these had been profoundly influenced, both in the arts of shipbuilding and navigation, by the enterprising example of the Scandinavian and English sea-adventurers with whom they had been brought into contact. It was, indeed, chiefly to the small

kingdom of Portugal, facing the Atlantic, that the first impulse of this great new movement of ocean exploration owed its origin; and it is interesting to note, in view of later developments, how close had been the relationship between this little maritime community and Great Britain.

It was largely with the help of English knights and men-at-arms that the obscure little country, as it then was, was freed from the domination of the Moors, and later supported on many occasions in its struggle for independence against its powerful Spanish neighbours. Later on, too, King John I of Portugal married an Englishwoman, the daughter of John of Gaunt, and it was one of their sons, Prince Henry the Navigator, who became the first great figure in Portugal's maritime history.

Surrounded as it was on the land side by Spanish provinces almost always hostile, Prince Henry realized, perhaps more than any of his contemporaries, that Portugal's future then lay upon the sea; and throughout a considerable portion of the fifteenth century he was busy upon projects of overseas trade and colonization. The first of the Portuguese colonial outposts was formed at Ceuta in the year 1415, when, at the age of twenty-one, Prince Henry, with his father and brothers, and with the aid of Henry V of

England, captured it from the Moors. Soon afterwards trading posts were founded both in the Canary Islands—the Fortunate Islands, according to some of the ancients—the Azores and Madeira.

The last of these islands had been discovered in 1370 by an Englishman, Robert Macham, of Bristol, while eloping with an heiress with whom he was trying to reach Spain. A succession of storms drove his vessel far out of its course, and accidentally brought him to a strange island, where he landed. A further storm drove the vessel from its anchorage, and both the heiress and Macham died soon afterwards. The rest of the survivors, largely, it is believed, owing to their superstitious dread of the island's malevolent nature, resolved to leave it at all costs, and succeeded in reaching the coast of Africa in the ship's boat, where they were made slaves by the Moors. Here they apparently all met their end, but a fellow-prisoner to whom they had told their adventures subsequently escaped to Portugal, and it was as a result of his reports that the island was rediscovered.

The Canary Islands had similarly been discovered in the year 1270 by an expedition from Genoa, and forgotten again for the greater part of a century until some Portuguese sailors again found them; and the history of the Portuguese

occupation of the Azores was somewhat similar. But it was in the systematic exploration of the west coast of Africa that Prince Henry, this far-seeing half-English sailor, inspired the most valuable work, of which it is only possible here to give the briefest account.

Settling at Sagres on the promontory of Cape St. Vincent, Prince Henry gradually collected about him many of the most experienced navigators, astronomers and cartographers then living, and under his guidance, and as the result of his foresight, achievement followed achievement in almost dazzling succession. In the year 1433 Cape Bojador was doubled, while in 1445 the river Senegal was reached, Sierra Leone being explored during the following year. In the year 1448 Diego Gomez reached and entered the Gambia River, and in the year 1456 Alvise Cadamosti, a Venetian sailor in Prince Henry's service, visited and was probably the actual discoverer of Cape Verde Islands. In 1482 another Portuguese sailor, Diego Cao, discovered the Congo River, and some six years later Bartholomew Diaz rounded the Cape of Good Hope, probably for the first time since the half-legendary voyage of the Phœnicians referred to by Herodotus.

In the following year Vasco da Gama left Portugal with four ships and less than two

hundred men, rounded the Cape of Good Hope, and entered the Indian Ocean, to find himself in seas that had long been explored and were still being traversed by enterprising Arab navigators. Largely with the aid of these Moslem pilots and their Arabic charts, Da Gama visited the Malabar coast, arriving home, with valuable cargoes of spices and knowledge of a new trade route, two years after he had started.

In the year 1500 another Portuguese sailor, Cabral, while *en route* to India, was driven by storms and contrary winds out of his course, and accidentally discovered Brazil, though there is ground for supposing that a Spanish sailor, Pinzon, had, in fact, sighted the Brazilian coast some three months earlier. In the years 1501 and 1502 Portuguese sailors discovered the Island of Ascension and St. Helena, and four years later the famous navigator, Tristan da Cunha, came upon the island now known by his name. In the next year he discovered Mauritius, while in the six years between 1509 and 1515 the newly-made Portuguese Viceroy of the East, Albuquerque, took possession of Goa, Malacca and Ormuz, and brought the whole trade of the Malay Archipelago under Portuguese dominion. Two years later, in 1517, these indefatigable Portuguese navigators opened up trade with Canton, and in the year

1542 they discovered Japan. At this moment the actual maritime empire of Portugal was undoubtedly one of the greatest in the world's history, and Lisbon was one of its richest and most stirring cities.

But a yet greater empire was now being welded with almost more startling rapidity, and it is time to turn for a moment to the amazing results that were already crowding men's minds as the result of the epoch-making voyage of Christopher Columbus in 1492. This was the year in which Spain, its two principal kingdoms of Aragon and Castile having been united in 1474 in the persons of Ferdinand and Isabella, set the seal to its new-found unity by the conquest of Granada in the south, the only remaining precarious stronghold of the Moors in the peninsula.

In this welding process, however, the voyage of Christopher Columbus, by birth a Genoese, was perhaps an even more powerful factor. Attracted by the enthusiasm and prowess of the Portuguese navigators, under the inspiring influence of Prince Henry the Navigator, he had journeyed in their service to the coast of Guinea and probably as far north as Iceland. He had then formed the great plan of opening up a trans-Atlantic route to the east coast of Asia, knowing nothing, of course, of the vast

continent of America lying between. Unfortunately for himself, however, the King of Portugal refused to support the scheme, which was also rejected by the authorities of the great sea-republics of Genoa and Venice. Nor was his plan regarded favourably in England and France. In Spain, however, after a first discouragement, he succeeded in obtaining the patronage of Queen Isabella, and accordingly set sail on August 3, 1492, with two companions, on his epoch-making voyage which was to carry the torch of civilization into new regions.

Into the details of this we have not space here to enter with any great particularity. In his little vessel, the *Santa Maria*, of 100 tons, he sighted, on October 11, 1492, one of the Bahama Islands, now generally supposed to be Watling Island, and on his return to Spain in the following March was received with an enormous ovation. Leading a new expedition in the same year, he discovered the Island of Dominica, the Antilles, Jamaica, and the south coast of Cuba, which was, however, supposed to be a peninsula.

One result of this voyage was the famous proclamation of Pope Alexander VI, confirmed in the Treaty of Tordesillas in the following year, whereby Spain and Portugal were allotted the whole of these new discoveries, the former to the

west and the latter to the east of a meridional line drawn 370 leagues west of Cape Verde—an arrangement that gave rise to extreme confusion, but that, curiously enough, was not challenged either by France or England, the latter of whom had not then, of course, definitely broken with the Roman Catholic Church.

Discoveries under Spanish auspices now followed in quick succession. In the year 1497 Amerigo Vespucci, upon whose exploits subsequent criticism has thrown some doubt, made several voyages, and afterwards gave his name to the great American continent that now came into the purview of humanity. In 1498 Trinidad was discovered, and in 1499 Pinzon, one of the original comrades of Columbus, was the first Spaniard to cross the Equator, touching Brazil—probably some three months before the Portuguese explorer Cabral, whom we have already mentioned—and finding the mouth of the Amazon.

In 1502 Columbus, on his last voyage, came across the coast of Honduras, and in 1512 the Spanish sailor, Juan Ponce de Leon, discovered and annexed Florida on behalf of Spain, the first possession of this empire in North America. In the next year yet another Spaniard, Vasco Nunez, from a mountain-top in the Darien Isthmus, made the tremendous discovery of the Pacific Ocean,

which he also annexed in the name of his emperor. In 1518 Juan de Grisalva returned with the news of an amazingly wealthy and highly civilized people living in Mexico, and the following year saw what was perhaps the most epoch-making journey of all in the voyage of the great Portuguese navigator, Ferdinand Magellan, who sailed under Spanish auspices.

Leaving San Lucar, he reached the mouth of the Rio de la Plata in South America, and began to explore the unknown coast southwards for a possible channel leading to the west. In November he discovered this, and rounded the southern extremity of the continent through the straits which have ever since borne his name. He then entered the ocean, christened by him Pacific, and ninety-nine days afterwards, when he and his crew were almost upon the verge of starvation, he reached the Marianne Islands, and ten days later arrived at the Philippines. Here he died in a local fracas, but his flagship, the *Victoria*, made her way home through the Indian Ocean, rounding the Cape of Good Hope, and so performing the first circumnavigation of the world.

By the middle of the century the Spanish dominion over Mexico and Peru was more or less firmly established and the undreamed-of riches of these new countries were already being drained

into Spanish coffers. Spain was now rapidly climbing into a dominion surpassing that of any of the great empires of the past.

In the year 1580 the kingdom of Portugal fell to Spanish arms, and its widespread maritime possessions also passed, at any rate in a nominal sense, under Spanish dominion. Troubled though she was on every hand, Spain was now at the supreme height of her material power. To a united peninsula at home she added vast possessions in Italy and the Netherlands, held sway over Tunis and Oran, in Africa, together with the Cape Verde and Canary Islands, to say nothing of the continent of South America and the province of Florida in North America; she claimed, too, the lordship of the Pacific Ocean.

Fundamentally, however, she remained, in spite of these far-flung possessions and assumptions, a continental and military power, hiring rather than producing seamen, and largely dependent for her overseas commerce on subsidized foreign fleets.

In spite, however, of her possessions in the New World, her vision of sea power, and even of shipbuilding and naval warfare, still remained what may best be described, perhaps, as of the Mediterranean type. Though her merchant vessels regularly crossed the Atlantic to bring home the

treasures of Mexico and Peru, this journey, as Columbus satirically said, had become so simple that every tailor was turning explorer.

Moreover, it was in the Mediterranean that Spain was beginning to find herself overtaking and usurping the supremacy of the Genoese and Venetian sea-merchants; it was also in the Mediterranean that her fleet had played so significant a part in the great victory over the Turkish navy at Lepanto.

Before the century was out, however, she was to be bitterly undeceived as to her real qualifications for ocean authority. For seamen of the island kingdom of the Tudors had also been crossing the ocean and surveying these new countries beyond the Atlantic. Territorially so weak as to seem but a pigmy beside the vast empire of Spain, in the practical and hard-won knowledge of the sea, in the art of naval construction and in the management of ships of war she was her superior, and the defeat of the great Spanish Armada in 1588 was to prove England second to no nation on the oceans.

But before turning to the progress of English shipping during these astonishing years, let us again pause for a moment to consider the vision of the world as it now presented itself to civilized mankind.

ocean-stage, of the world's civilization had indeed come into being, and it must now become our task to trace the effect of this development on the supreme maritime genius that had slowly been coming to fruition amongst the small English-speaking population of the British Isles.

CHAPTER VIII

THE INTRUSION OF ENGLISH SEAMEN

Progress and Difficulties of British Shipping—Baltic and Mediterranean Ventures—The First All-English Trade Route—Early English Voyages to the New World—The Tudor Merchant Adventurers—The Clash with Spain—British Sea Supremacy.

DEFINITELY as the sea victory of Sluys had indicated the arrival of another maritime power amongst the European group of nations, the relative progress of the English-speaking people between that date and the beginnings of ocean-civilization had been inconspicuous. In their narrow seas they had, on the whole, maintained their mastery. But compared, for example, with the territorial expansion of the Ottoman Turks, the commercial development and enrichment of the great Italian republics of Venice and Genoa, the widespread colonizations of Portugal, and the later and even more astonishing achievements of Spain, they had remained a more or less poor and secondary, though uninvaded and unsubjugated, community. It would indeed have been a preternaturally shrewd and detached spectator who would have discerned in such

apparently overwhelming superior organizations as the great Hanseatic League, the Republican trading fleets of the Adriatic, the Portuguese and Spanish colonial systems merely the pacemakers of the obscure British islanders, whose ultimate empire was to embrace nearly a quarter of the earth's surface.

Such was the case, however, and during these intervening generations of apparently unfruitful struggling against heavy odds there was being perfected that race of hardy, resourceful and self-reliant seamen-merchants which was eventually to prove itself so supremely equipped for the development of the new overseas continents and to secure a general respect throughout the oceans of the world for its own hardly-won ideals of tolerance and fair play.

Though still overshadowed in northern European waters by the wealthy and skilfully organized Hanseatic League, one group of English merchants—or rather merchant seamen—encouraged by a Charter of Incorporation granted them by Henry IV (1399-1413) were struggling to carry on, in the face of much covert and often openly piratical rivalry, a sparse but independent trade with the Baltic and Scandinavian seaports. In the same reign also the association of traders known as the Merchant Adventurers received

royal recognition for the purpose of commerce with Flanders. English merchants, too, were trading regularly with Spain, Portugal and even Morocco; and under the powerful protection of Henry V further established their prosperity in these regions.

Thus there were at this time regular shipments of wool from London, Boston and Southampton, destined chiefly for Calais. Other fleets bound for the great Flanders trading centres of Bruges and Antwerp sailed annually from various east-coast ports. An Iceland fishing fleet left Bristol every spring, returning in the following autumn. A group of vessels sailed for Bordeaux every winter to bring back a share of the previous autumn's vintage, and it has been stated that as many as eight thousand Englishmen could be found at any time during these months in the French harbour at the mouth of the Garonne.

Under the weak rule of Henry VI, however, English merchants had a bad time, and often enough a would-be peaceful trading-ship found herself fighting not only for her cargo, but for the lives of skipper and crew. Especially was this the case in the north, where the kings of Denmark disapproved strongly of the direct trade between English ports and the rich fishing-grounds of Iceland, which were under their rule. In order

to collect dues from this trade an attempt was therefore made to confine such intercourse to the Staple at Bergen, an attempt almost impossible to enforce either upon the English seamen or upon their Icelandic commercial associates.

Jealousies on the part of the Prussian and Baltic merchants led to further flagrant irregularities, and the consequent disputes between infringers of treaties and contraband traders of all sorts gave rise to innumerable sea fights in these coveted and almost entirely unpoliced waters. The same thing happened, though to a far less degree, in the Mediterranean, where the comparatively few English seamen-traders often found themselves regarded askance by the rich and influential Venetian and Genoese merchants.

Side by side with a considerable advance in home industries of all sorts, the little community of English sea-traders were still to a very great extent regarded as intruders in the greater European waters, and as men who, if possible, were to be driven from the seas either by economic pressure or actual violence. It is hardly surprising that, as they became increasingly conscious of this attitude towards them and of the growth in the arts of civilization of the little island population whom they represented, their resentment not infrequently led to active resistance. They realized

more and more that the sea was essential to their national existence, and there can be little doubt that it was this continual opposition, this struggle against overwhelming odds, that was slowly forging them into the most self-reliant and seamanlike community in Europe. It was in this rough school that the ocean graduates of the Tudors were being sternly educated, and from which, in due season, they were to emerge with qualifications that could not be gainsaid.

They were well served, too, on the whole by their Tudor sovereigns, and with the accession of Henry VII English overseas commerce began definitely to assume a new significance and increased importance. He not only granted immediate bounties for the construction of new ships, but also secured a Navigation Act whereby the Bordeaux wine trade, that had latterly tended to pass once more into the hands of foreign carriers, should be conducted only by means of English ships, manned by English sailors. He also supported, by every means compatible with a cautious safeguarding of the general national interests, his overseas merchants in their rivalry and dealings with the great Hansa cities of the Baltic. He further negotiated a treaty with the King of Denmark, securing official recognition of English trade with the Iceland fisheries. It was also

to a large extent due to the royal interest and encouragement of shipbuilding, in association with the king's wise and careful diplomacy, that English merchants began slowly to improve and consolidate their position in respect of the Italian and Levant trade. In particular English wool always met with a ready sale in these parts of the world, and the English trading-ships found a variety of Syrian, Egyptian and Far Eastern wares wherewith to make the return journey. Loose groupings took place amongst the merchants so engaged for the mutual protection of their vessels against the Turkish and Moorish pirates then infesting the Mediterranean, for the establishment of the Royal Navy was due to no spirit of "navalism," but to the clamant needs of traders for protection of their ships and cargoes and crews.

The Merchant Adventurers, with their profitable Flanders trade, also received substantial support from Henry VII, and for many years after his death maintained their position as one of the most prosperous groups in the little island trading community. It was, indeed, chiefly due to their increasing power and wealth that what had been hitherto deemed the unchallengeable privileges of the Hanseatic League in England, with its great London commercial embassy of the Steelyard, were at last annulled during the reign

of Edward VI; and though these were restored for a short time under Mary, they were soon afterwards again withdrawn by Queen Elizabeth, the Hanseatic League being by that time not strong enough successfully to defend them by force of arms.

In the light of the Great War (1914-18), which is now a matter of history, it is interesting to recall the circumstances in which this German stronghold in the heart of London was disestablished. Unwarned by the movement of public opinion in the reign of Edward VI, the Easterlings pursued their high-handed way, as events at Hamburg early in the reign of Queen Elizabeth revealed. The story has been told elsewhere,[1] but may with profit be retold. "The Elbe port had evidently realized that, in the changed conditions of the world, the policy of unqualified exclusion could not be upheld, and in 1567 permitted the Merchant Adventurers to establish a factory within its walls. The concession was granted for a term of ten years, and before two of them had elapsed the turnover of the settlement had attained the sum of three and a half million thalers. At the instigation of the Hansa, a prolongation of the concession was refused, and the League, no longer

[1] "German Sea Power, Its Rise, Progress and Economic Basis," by Archibald Hurd and Henry Castle. (1914).

in a position to enforce its wishes by its own strength, appealed to the Emperor and Reichstag, who issued a decree prohibiting the settlement of the Merchant Adventurers in Germany. The final catastrophe of the Steelyard was precipitated by England's war with Spain, to whom the Easterlings, in spite of Elizabeth's emphatic warnings, systematically furnished supplies. No sooner had the Armada been scattered than Drake and Norris appeared in the mouth of the Tagus and seized sixty German vessels, laden with ships' stores, which were lying at anchor there. The perplexity and vacillation which the Hansa displayed when confronted by this action were clear signs of the decay and impotence that had fallen upon it. Only Wismar seems to have advocated the use of force to obtain redress; the other towns were unable to agree as to the course to be followed, and many of them were now openly disregarding the order for the expulsion of Englishmen from their territories. While a suspension of the conveyance of grain to and of cloth from England was being debated, Philip II himself intervened, and procured the issue of an imperial decree (August 1, 1597) ordering all Englishmen to leave German soil within three months.

"With commendable promptitude, Elizabeth retaliated by expelling the Hanse merchants from

England. The term for their departure, originally fixed at fourteen days, was prolonged to a few months, but on July 25, 1598, the Lord Mayor and Sheriffs were charged by the Privy Council to take possession of the Steelyard, and ten days later its members, headed by their Alderman, filed out of their premises in melancholy procession. Though the Hansa's property in London was restored to it under James I, its expulsion by Elizabeth was the final doom of its power in England."

This is a digression from the main course of our narrative, and we must return to the record of the progress of the Merchant Adventurers. Not only was the Steelyard doomed, but the trade with Spain began rapidly to expand during the reigns both of Henry VII and his son, Henry VIII; Cadiz, Seville and San Lucar were the principal ports visited, and wines, fruits and oil the cargoes with which the Englishmen usually returned. Later on, as the new West Indian products began to come upon the Spanish markets, an additional trade in sugar sprang up, the Bristol and south-coast merchants being chiefly interested in this particular commerce. At this time there were many resident English merchants in Spain; several Bristol firms maintained factors in the Canary Islands, and one Thomas Tison, another

Bristol man, was personally engaged in trade in the West Indies as early as 1526.

But the Reformation, the divorce of Katharine of Aragon, and the declaration of Henry VIII that he was the supreme head of the English Church, led to a pronounced cooling of the friendly relations between England and Spain, soon to be followed by acute hostility. To this the increasingly arrogant attitude of Spain towards the enterprises of English merchants, the irritating revival of bygone embargoes, and the tendency to level charges of commercial fraud lent added fuel. Once again it was little to be wondered at, especially in view of the rough school in which they had been educated, that the hot-blooded merchant-mariners of the south and south-west harbour towns of England should have retaliated in characteristic fashion.

Officially frowned upon, they were secretly sympathized with both by Henry VIII and later by his daughter Elizabeth, and though a definite war with so mighty a power as Spain was postponed as long as possible, it was already becoming the inevitable outcome of the persecutions and reprisals continually taking place. Overshadowed as they had been, too, by the immense and mushroom-like growth of the Portuguese and Spanish colonial empires, described in the last

chapter, a quiet but successful consolidation of English maritime progress was throughout this time unobtrusively being effected, as the establishment of the earliest great English chartered companies, the Russian, or Muscovy Company, and the Turkey, or Levant Company, testified.

As a result of the formation of the first of these, a new and entirely English trade-route was opened up and profitably exploited; English trading-stations, with resident factors, were established as far inland as Moscow; valuable sources of supplies of such articles as wax, oil, furs and timber were thus tapped to the advantage of the whole British nation. As a result of the formation of the second company, a large proportion of the trade hitherto carried by the now-decaying Venetian mercantile marine passed into English hands; the Turkey Company maintained a comparatively large and efficient sea-going fleet, and entered upon a career that was to last for more than two hundred years.

It is time, however, to examine the effect upon the minds of English seamen produced by the discoveries of Columbus and his fellows, and to note the consequences flowing therefrom to the people that employed them. It is characteristic, perhaps, of the slowness of adjustment to new conditions apparently inseparable from the Anglo-

Saxon temperament that none of the first English voyages to the West were, in fact, initiated or commanded by Englishmen. That there were, of course, other reasons for this, apart from a mere accident of character, is no doubt probably the case; and it must be remembered that, educationally speaking, Great Britain was still, at this time, perhaps a generation or two behind most of the Mediterranean countries. Even in her schools and universities the more exact sciences were scarcely studied, while her practical sailors looked rather askance upon what may be called the higher branches of the art of navigation.

It was, therefore, to John Cabot, of Genoese birth, and his sons that England was indebted for her first New World discoveries, though these men were accompanied by British seamen and sailed under the patronage of Henry VII. As in the case of Columbus, so in that of John Cabot, it was the east coast of Asia, and particularly that portion of it owned by the Emperor of China, that was the objective—probably as the result of the earlier accounts of the vast wealth and resources of this dominion originally brought to Europe by Marco Polo.

Like Christopher Columbus, Cabot, essentially a sea trader, had no idea of the immense continent that lay between, and, like Christopher Columbus,

even when he had found it he believed himself actually to have achieved no more than the Atlantic passage to Asia. An interesting confirmation of this occurs in a letter to one Lorenzo Pasqualigo, an Italian merchant living in London, written to his relatives in Venice, on August 23, 1497, wherein he gives the tidings that "the Venetian, our countryman, who went with a ship from Bristol in quest of new islands, is returned, and says that 700 leagues hence he discovered, then, the territory of the Grand Cham," while later on in the same year an envoy of Milan sent home a report to his superior to the effect that "it may not displease you to learn how His Majesty here has won a part of Asia without a stroke of the sword."

Sailing for the first time in 1497, further voyages were made in 1498, 1501 and 1502, while in 1527 one John Rut, in the *Mary Gifford*, sailing from the Thames, seems to have coasted along the Atlantic shore of North America, ultimately arriving at Porto Rico in the West Indies. Other notable voyages were those of William Hawkins, of Plymouth, to Brazil, the first of these being undertaken in 1530. His example was thereafter followed with such regularity that we find certain merchants of Southampton and London actually building for themselves a fortified trading post on

the coast of Brazil in 1542. With sure reliance on English seamanship, English merchants, too, soon began to open up a regular trade with the west coast of Africa, and the records of voyages to this coast, such as those of Thomas Wyndham in the *Lion* of 150 tons in 1551, began to appear in our sea-annals—gold, iron, sugar, various fruits and, later, slaves being the chief products to be brought back.

It was not, however, until the accession of Qucen Elizabeth in 1558 that there may be definitely said to have been ushered in an era of unexampled development in every phase of English life. With their last Continental possession, in the shape of Calais, torn away in the previous reign, and with a total population of not more than five million people, the islanders were true islanders indeed, possessing not a rood of land overseas. Theirs was a pigmy State. The Spaniards "had risen," as James Anthony Froude has reminded us,

> "On the crest of the waves, and with their proud *Non sufficit orbis* were looking for new worlds to conquer, at a time when the bark of the English water-dogs had scarcely been heard beyond their own fishing-grounds, and the largest merchant vessel sailing from the port of London was scarce bigger than a

modern coasting collier. And yet within the space of a single ordinary life these insignificant islanders had struck the sceptre from the Spaniards' grasp and placed the ocean crown on the brow of their own sovereign."

The British islanders, when Queen Elizabeth ascended the throne, were about to leap, as it were, into the full strength of a sea-based nationhood. Amidst a host of lesser contemporaries who in any other age might have been regarded as the country's greatest sons, we find such men as Shakespeare, Marlowe, Spenser, Raleigh, Drake, Hawkins, Frobisher and Gilbert breathing the sweet English air and looking out over new worlds, both physical and mental, of inexhaustible promise.

Often enough in his own person a man of this wonderful age was sailor, soldier, merchant, poet and scientist; and in the trading-ships of England, during this period, the flower of her virile genius took the seas. Into every part of the unfolding world, conscious of their new power, English sea-captains, curious and adventurous, pushed their way.

"Variety to them was the hope of life. Anthony Jenkinson served his apprenticeship to adventure among the Corsairs of the

Levant, and occupied his prime in diplomatic work at Moscow, in traversing the plains of Russia, and outwitting the bandits of Central Asia. Frobisher bartered beads for gold-dust on the Guinea coast, then sought a passage to Asia through the North Isle, converted the undertaking without a thought of inconsistency into the exploitation of a gold mine, sailed next with Drake to raid the Spanish colonies, commanded a squadron against the Armada, and received his death wound as an officer of the Queen in a land battle on the coast of Brittany. John Davis reached a record latitude in the Arctic, lost four-fifths of his crew in an attempt to pass the Straits of Magellan, and ended his life in fighting with Japanese pirates in the Eastern Ocean." [1]

With the personal stories of many of these men we have already dealt in a previous volume,[2] and in this present book, in which we are briefly tracing the influence of the tramp ship rather than that of any of its particular owners, we can only summarize the chief expeditions of this astonishing epoch. Thus in the year 1558 began the then unprecedented journey of Anthony Jenkinson, of

[1] "Short History of British Expansion," by J. A. Williamson.
[2] "The Sea Traders."

the Muscovy Company, in which he visited Kazan, Astrakan, sailed down the Caspian, and finally arrived at Bokhara, to return at last to Moscow four years later. In 1561 he travelled along the same route and laid the foundations of the English trade with Persia. In the same year an English ship, the *Primrose*, owned by a syndicate under the presidency of Sir William Gerrard, visited the Guinea coast, and in 1562, when no one had any thought that slavery was not in the Divine ordinance of things, John Hawkins, in command of three ships, sailed to the same destination, secured three hundred negro slaves, sailed with them across the Atlantic, and traded them profitably for cargoes which he brought home with success in the following year. In 1564 Hawkins repeated this adventure, and although he met with considerable opposition from the authorities in the Spanish Main, he once more returned with profit and success.

In 1565 an Englishman, Arthur Edwards, succeeded in reaching Kazbin and obtaining large commercial concessions from the Shah of Persia. A hint of what was increasingly in store for these daring English merchant adventurers may be gleaned from the voyage to Guinea in 1566 undertaken by George Fenner with three trading vessels and a pinnace. After meeting with perhaps

natural hostility from the negroes, he fell in with a large Portuguese warship, together with six armed caravels, in the neighbourhood of the Azores, and for three days maintained an almost single-handed conflict with them, eventually succeeding in throwing them off and returning safely home. Then, again, in the following year, 1597, we find Hawkins repeating his Guinea and New World voyage, this time taking with him his young relative, Francis Drake. This was the voyage in which, in the little harbour of San Juan de Ulloa in the Gulf of Mexico, the Englishmen fell in with a large Spanish fleet commanded by the new viceroy, only narrowly escaping capture, and eventually returning to England after the severest casualties and privations. In 1569 we have the record of yet another expedition, under the auspices of the Muscovy Company, whereby twelve Englishmen, with a large number of Russians, went to Persia, where they remained for some years, and succeeded in obtaining a large consignment of valuable commodities. In the years 1570, 1571 and 1572 Drake and Oxenham were once more in the New World, gathering vast quantities of treasure. In 1575 Oxenham sailed again, to be eventually captured and slain by the Inquisition in Peru.

In 1576 Martin Frobisher set sail with the

Gabriel and *Michael*, little ships of 25 tons each, and reached what is now known as Baffin Land. In 1577 he sailed again with these same small vessels, but with the addition of the *Aid* of 200 tons, belonging to the Queen herself, and sighted Greenland on his way to the gulf that is still known as Frobisher's Sound. This was the year, however, made more famous still by the sailing of Drake, on December 13, in the little vessel with which he was ultimately to circumnavigate the world, and his return on September 26, 1580, with the richest cargo that any single vessel had ever before brought into an English harbour.

So the story goes on, with such voyages as that of Sir Humphrey Gilbert, in 1583, in which he formally took possession of Newfoundland in the name of his country, and subsequently visited Nova Scotia—the same year in which another Englishman, Ralph Fitch, set out in the *Tyger* of London and, landing at Tripoli on the Syrian coast, made his way to Aleppo, voyaged down the Euphrates to Basra, through the heart of India into Burma, and down to the Malay Peninsula, returning at last to London after an absence of eight years. In 1585 began the first voyage of John Davis, perhaps the most scientific seaman of his age, in which he surveyed the western shore of Greenland and Baffin Land, to re-discover, in the

following year, Hudson Strait, which had been accidentally stumbled upon in 1578 while a fleet under Frobisher had been searching for the gulf that bears his name. Another wonderful voyage was that of Thomas Cavendish, a landowner of Suffolk, who in 1586, in command of three ships, made his way through the Straits of Magellan, captured much Spanish treasure in the Pacific, and, completing the second English circumnavigation of the globe, returned in safety in 1588. It is perhaps interesting to record that in the year 1587, while this voyage was in progress, the first English child was born in America, in the colony that Raleigh was attempting to found in Virginia. The expansion of the English race had begun.

Such a list is at best but the briefest epitome of the kind of work that was being done by English traders and seamen in little ships during the years immediately preceding the critical days of 1588, in which at last the sea powers of England and Spain were pitted in the inevitable and decisive conflict which resulted in the defeat of the Great Armada. But the fact that in almost every one of these years it is possible to point to at least one outstanding historical expedition is perhaps the best evidence of the vast number of lesser and unrecorded voyages that were being undertaken upon almost every sea, while the eagerness with which

volunteers thronged to man the vessels of such men as Hawkins, Drake, Frobisher and Gilbert serves to show the extent and character of the sea-going population from which these great leaders were able to pick their crews.

Into the story of the overwhelming victory of English seamanship that resulted in a blow to the world-wide power of Spain, from which she never really recovered, this is not the place to enter. But there are still certain general misconceptions in respect of this, one of the world's decisive naval engagements, that it might be worth while, perhaps, again to correct. For in reality, and speaking in terms of the sea, it was not, as so many people still suppose, the case of an admittedly weaker and less efficiently equipped, more or less amateur English fleet bringing about the sensational collapse of an overwhelmingly superior Spanish naval force. It was, on the contrary, a decisive endorsement of the fact that the British science of ocean shipbuilding was, at this time, very considerably superior to that of Spain and the Mediterranean sources from which she drew so many of her auxiliaries. It was also a demonstration of the far more expert gunnery equipment generally of the British vessels engaged. But these advantages were insignificant in comparison with the triumphant seamanship that had

been ripening through the stormy and arduous years of England's great uphill struggle for marine existence. In this battle which gave world-freedom to the British islanders the ordinary trading-ships took no small part. If it was not a merchant seamen's victory—a victory of the tramp ship—at least the seamanship was the product of the small ships which had burst into the oceans of the world in search of profitable cargoes.

In later years, as subsequent English privateers learned to their cost, the rulers of Spain made profitable use of the many lessons that they had learned so bitterly as the result of their calamitous defeat. But the fact remained that from thenceforward the idea that any ocean could belong to any one country definitely faded from world politics. The Freedom of the Seas had been won, and won largely by the aid of the ordinary trading-ship of the English seamen.

CHAPTER IX

THE OCEAN CIVILIZATION

The Oceans as the Highways of Commerce—Decline of Spain and Portugal as Maritime Powers—Ascendancy of Dutch Oversea Traders—Beginnings of Dutch East India Company—The Dutch Struggle for Maritime Supremacy—English Colonial Expansion—The Rise of France as a World Sea-Power—The Anglo-French Wars—Steady Increase of English Mercantile Marine—The First Empire of the Seas.

THE ocean phase of the world's development had now begun. The sailor, with his trading-ship, had presented Western civilization with realms which even to-day are to a great extent virgin. The oceans, giving access to new sources of wealth, assumed a wholly unexpected economic importance as the highways of commerce. The maintenance of ocean communications was to be recognized in future as the primary condition of national prosperity. During the next two centuries there developed as a result of this discovery a keen rivalry between the mercantile marines of the maritime nations.

In this new race the countries of the East, so largely the cradles of the earliest forms of culture, played an insignificant and, indeed, almost negli-

gible part in view of their contributions during the river and sea phases of civilization. For the exploration and mastery of the oceans, for the development and maintenance of long-distance sea-routes, for the arts of shipbuilding and marine trading on a large scale, the oriental mind seemed to be generally ill-adapted. It was in the West that what were to become the dominant ocean-going races were being evolved; and, of these, the English-speaking family, originating in the islands of Great Britain, was ultimately to prove itself the greatest.

It was not, however, until the early days of the nineteenth century that this was to become unquestionably manifest; and before passing on to consider the great inheritance that fell at last to the English-speaking peoples, it must be our task in the present chapter very briefly to summarize the main intervening events.

Spain, never really a maritime nation, had found herself, by the end of the sixteenth century, unable to maintain an effective overlordship of the seas; and although Portugal was to win back her national independence at home, her brief hour of marine supremacy had already passed for ever. In Eastern waters, it is true, she remained for some decades a considerable power; but the enterprises set on foot by the

Elizabethan merchants of England soon began to overtake, and eventually to outstrip, the less efficiently directed trading efforts of the Portuguese.

Nevertheless, it was in Eastern waters that the presence of the new challenger was first revealed to England and the world in the shape of the Dutch, whose struggle for independence from Spain had won the admiration of Protestant England. Already these people, in respect of northern Europe more advantageously placed than England, and equally expert, if not indeed superior, in the quality of their shipbuilding, had succeeded in absorbing most of the carrying trade in what had once been the great Hanseatic orbit. Nor had the Dutch been less quick to realize the possibilities of the sub-Arctic fishing-grounds and the rich opportunities awaiting their growing power in the Eastern Mediterranean.

With the appearance of a Dutch fleet, under Cornelius Houtman, in the year 1596, they became, however, definite competitors for what was then the far richer trading sphere of the East Indian islands. Almost contemporaneously with the founding of our own East India Company, in 1601, a Dutch East India Company was established upon a scale nearly four times as great, and its affairs were so forcefully prosecuted, in

the teeth of both Portuguese and English rivalry, that within a generation the traders of our own East India Company had been practically driven from their original island objectives.

Though this eventually led to a far more fruitful concentration of English effort upon the much wider field of India proper, it naturally provoked the deepest resentment on the part of all the Englishmen concerned, while the reception in England in 1624 of the tidings of a peculiarly cold-blooded massacre of English merchants in the Island of Amboyna by the Dutch caused a degree of national indignation that probably rendered the subsequent Dutch wars of this, the seventeenth, century inevitable.

Prior to the wars which opened in the year 1652, the efficiency of the Dutch mercantile marine, and the fact that it was able to carry freights at a lower rate than that demanded by English shipowners, had evoked a serious response in England. Thus in 1612 the Shipwrights' Company had been incorporated in London. It had for its primary purpose the improvement of the vessels of the navy, and succeeded in influencing beneficially the art of British ship-building in general. To this company, still in vigorous activity in this twentieth century, has been attributed the evolution of the frigate, the

superiority in speed and ease of navigation of which was to be demonstrated in the bitter conflicts that were to follow. Another event of some importance in the peculiar circumstances of the time—though its importance has usually been greatly exaggerated—was the Navigation Act, passed in 1651 under Cromwell, whereby the import into Great Britain and Ireland and the British colonies of goods from Asia, Africa and America was disallowed unless they were carried in English or English-colonial vessels, more than half of the crews of which were of English birth. Further, no third party was allowed to carry goods from Europe to any part of British territories, the shipment from Continental countries being confined either to English vessels or those of the country concerned. Naturally this legislation was obnoxious to the Dutch, who were aiming to become, and to an extent had succeeded in becoming, the chief ocean-carriers of the world, while the long traditional English custom of demanding a salute from foreign vessels in the North and Narrow Seas, referred to in an earlier chapter, was an additional source of irritation to the Dutch sailors. With the details of the stubborn naval combats that ensued this is not the place to deal. Suffice it to say that by the end of the century English maritime supremacy, at any rate as far as

the Dutch were concerned, had been definitely secured.

The next challenger of the preponderating influence of Great Britain at sea was France, but before dealing briefly with the chief events of the prolonged struggle that was to ensue, let us glance at the English colonial development that had taken place. The British were no longer lonely islanders, owning not a rood of land beyond their own circumscribed sea-frontiers, as was the case when Queen Elizabeth ascended the throne. They had begun to spread overseas, settling in far-off lands. In the year 1607, four years only after the union of the English and Scottish Crowns in the persons of James I of England and James VI of Scotland, the southern half of Chesapeake Bay had become the possession of the Virginia Company,[1] while Sir George Calvert, the first Lord Baltimore, received a concession and founded Maryland, in the northern half of the same bay, in the year 1634. The Bermudas, placed as they were upon the trade-route between Virginia and the home country, were occupied in 1609, while the islands of the

[1] Virginia was the title given by Sir Walter Raleigh, in honour of Queen Elizabeth, to the whole of the territory which was afterwards separated into the thirteen colonies which declared their independence in 1776. The Virginia of to-day, consisting of a part only of the original territory, was not colonized until the succeeding reign.

Barbadoes and St. Christopher were formally taken possession of in 1624, and those of Nevis, Antigua and Montserrat in 1627. This was seven years after the sailing of the *Mayflower* with the Pilgrim Fathers and the foundation of New England, and a year before a second body of religious exiles formed the Massachusetts Bay Company, with rapidly extending connexions in Rhode Island, Connecticut and New Haven. As a result of the Treaty of Breda, following the second Dutch war of 1667, the former Dutch colonies of New York and New Jersey definitely passed into English hands, the colony of North Carolina, in the south, having been founded in 1663, and that of South Carolina in 1670.

These oversea expansions marked the beginnings of the British Empire. The natural growth that it entailed in English colonial shipbuilding and shipping, and the increasing trade that was being carried on by English vessels in the services of such companies as the great East India Company, the old Levant Company and the Royal African Company, were the first-fruits of this movement. This was the setting, so far as the British people were concerned, of the chief events of the prolonged competition of the next hundred years or so between England and France.

Thanks to such men as Richelieu, Colbert

and Louis XIV, France was seriously envisaging herself as the supreme power of the world; and Colbert in particular had deeply concerned himself with establishing her claim to maritime influence.

For this purpose she had, of course, considerable geographical advantages. With great harbours on the coasts of the Atlantic and the Mediterranean, and with a stake in North America in the shape of what was afterwards to be Nova Scotia, she had every inducement towards the development of strength at sea. It was not, however, until Louis XIV espoused the cause of the exiled James II that the two nations first came into actual armed conflict. Defeating the English at Beachy Head, the French navy established a prestige that, fortunately for England, was damaged at La Hogue, and further weakened during the War of the Spanish Succession that soon followed. In spite of the relentless and frequently successful efforts of such French privateersmen as the famous Jean Bart, the English—with the Dutch, who had by a curious chance become their allies—proved as competent at sea as their armies, under Marlborough, were proving themselves on land, the capture of Gibraltar by Sir George Rooke being one of the outstanding strategic gains of the war. The struggle was ended by the Treaty of Utrecht,

signed in 1713. England then found herself in possession of Nova Scotia, Newfoundland and Hudson Bay in America, while in Europe she retained Gibraltar as well as the Island of Minorca.

After this there ensued, owing largely to the able but conservative and peace-loving policy of Walpole, twenty years or so of peace and prosperity, which came to an end in 1739, when another war with Spain—arising from a dispute over the trade of England with the Spanish colonies—soon merged into what was essentially a second conflict with France. Of this war, the chief marine events were the wonderful voyage of Anson round the world in 1740, from which, like Drake, he returned laden with Spanish treasure; and the successful actions fought by Hawke and Anson against the French in the Atlantic. In 1756 war between the two countries broke out afresh, and it was during this—the Seven Years War—that the victory of Plassey in 1757[1] laid the foundation of our Indian Empire, while the year 1759 witnessed the capture of Quebec by Wolfe—then only thirty-four years of age—and the victory of Hawke in Quiberon Bay. In virtue of the Treaty of Fontainebleau in 1763, England became possessed of the whole of Canada

[1] Hostilities between the English and French settlers in India had broken out in 1746.

as well as of the West Indian islands of St. Vincent, Dominica, Tobago and Grenada, while she received Florida from Spain, to whom she restored the captured island of Cuba. Although the French privateers had made severe inroads on the British mercantile marine, England had, nevertheless, at the end of the Seven Years War, some 8,000 merchant vessels afloat and a general maritime ascendancy even better established than before.

There was now to follow, however, that disastrous error in colonial administration from which the Mother Country was eventually to learn a deep and abiding lesson in the art of overseas government, but for which she had to pay the price in the loss of her North American colonies. This was the more severe because already the mercantile marine of these trans-Atlantic possessions was almost equal to half her own, while the shipbuilding materials at their disposal, in what was still the wooden-ship era, were of incalculable actual and potential value.

Owing to a variety of circumstances, England found herself engaged almost single-handed with a world that was either actively hostile or watching events in armed neutrality. Thanks to such leaders, however, as Rodney and Hood, her great reservoir of men trained to the sea, and the

schooled sea-instinct of her island race, further disasters were averted; and although she was in 1783 shorn of her American possessions, as well as of the Island of Minorca in the Mediterranean, her maritime ascendancy had not in any serious degree been modified.

For ten chastened years there ensued a period of peace, and then once more, in 1793, war with France broke out, and continued with only a short break until the victory of Waterloo, in 1815. Made glorious at sea by the victories of Nelson, particularly those of the Nile, Copenhagen and Trafalgar, it was British sea power, as has so repeatedly been stated, that finally caused the downfall of Napoleonic ambition; and although, as in her previous wars with France, the British mercantile marine suffered severely, it again proved equal to the demands placed upon it, and, in fact, emerged stronger at the end of the war than it was at the beginning. The islanders, as sea traders, relying for their prosperity on the ship of commerce—defended, when necessary, by the ship of war—had become the characteristic nation of the ocean phase of civilization and had founded the first Empire of the Seas.

CHAPTER X

THE FRUITS OF BRITISH SEA POWER

The Industrial Awakening in England—The Development of the Tramp Ship in the Eighteenth and Nineteenth Centuries—Maritime Legislation of the Nineteenth Century—Jonathan Hulls and his "New-Invented Machine"—The Influence of Steam upon Tramp Ships—Changing Bases of Ownership—The Sea-Carrying Power of the United Kingdom before the War.

THE close of the Napoleonic wars in 1815 found Great Britain in an unchallengeable position at sea. Her maritime progress had been overshadowed in the fourteenth and fifteenth centuries by the great fleets of the Hanseatic merchants and those of the Italian sea republics; it had been outstripped in the sixteenth century by the immense maritime expansion of Portugal and Spain; it had secured, in the first place, independence, and then definite ascendancy in the last decade or two before the opening of the seventeenth century; and this ascendancy it preserved first against the Dutch, and then against the French during the one hundred and fifty years before Waterloo. There was no other navy in the world even remotely comparable with that of Great Britain, while, in respect of her mercantile

marine, this country emerged from the depredations of the French and American privateersmen stronger than ever in her history.

The England of 1815 was upon the threshold of a vast industrial awakening, based on victorious sea-power, which was to convert her into "the factory of the world." The country was so different in almost every respect from that with which we are familiar to-day that it may be interesting to glance back over the nineteenth century to see how remarkable the change has been.

The country was still predominantly agricultural; its population since the days of Elizabeth had little more than doubled, and was still under eleven millions. Most of what are now main roads were little better than earthen tracks, beaten more or less hard by traffic. The journey by coach from London to Edinburgh or Glasgow was still a matter of days. Though a beginning had been made in the construction of canals, the inland transport of goods was inefficiently carried on in the main by means of rough waggons or packhorses. The principle of the steam engine had been discovered, and the enormous possibilities of the latent coal and iron resources of the country had begun to dawn on man's imagination, but the development of these, which the nineteenth

century was to witness, was still in the stage of infancy.

Yet the movement had begun; and just as Italy had led the way in the great renaissance of the arts in the fifteenth century, so, in the nineteenth, Great Britain was to be the pioneer of a material and mechanical awakening equally astonishing. Various factors contributed to the establishment of this leadership. The steam engine of James Watt, the spinning-jenny of James Hargreaves, Arkwright's spinning-frame and Cartwright's power-loom had all come into being within the space of a dozen years, towards the end of the eighteenth century. There had accordingly been revealed in what was still England's chief exporting industry the enormous potentialities in the way of increased production which resided in machinery driven by the new power, while the beginning, about 1793, of the regular importation of raw material from the United States of America provided an added stimulus to the cotton trade. Moreover, far-seeing men began to realize the promise of prosperity which resided in the coal and iron stored in British soil.

The latter part of the eighteenth and the first few decades of the nineteenth century accordingly witnessed an unprecedented revival of road-

making, bridge-building, canal and harbour construction and, later, the laying down of the first railways. The names of two great Scottish engineers, Thomas Telford and John Rennie, emerge as typical figures of this movement. To Thomas Telford, the son of an obscure shepherd, and himself in early life a herd boy, Great Britain owed the construction of the Caledonian Canal, the harbours of Dundee and Aberdeen, the construction of nearly 1,000 miles of road, as well as some 2,000 bridges, of which perhaps the most remarkable was the famous Menai Suspension Bridge, built in 1820. The construction of St. Katharine Dock, in London, finished in the year 1828, was also due to Telford. We trace to the engineering genius of John Rennie—the son of a small farmer, and, like Telford, educated in a parish school—the great system of the Avon and Kennet Canal, many bridges, including Southwark and Waterloo bridges across the Thames, the construction of harbours at Grimsby, Hull, Holyhead and Kingston, as well as the improvement of Portsmouth, Plymouth, Chatham and Sheerness Dockyards.

As a further consequence of this surprising evolution of agricultural England into industrial England, there naturally followed a gradual but very remarkable change in the character of her

exports. While cloth and textiles still remained, of course, her chief contributions to the needs of customers overseas, they no longer constituted, as for so many previous centuries, her chief export. Owing to the newly tapped coal measures and recently exploited ironfields, in association with the skill and enterprise of her engineers, she found herself more and more becoming the chief source of supply to other nations of a widening range of things. Coal and machinery, iron goods and hardware were produced in huge quantities and sold abroad, while the raw materials for which these new industries called, as well as the food supplies demanded by the growing industrial population, were brought back to her busy harbours from every corner of the world in ubiquitous ships of commerce.

Remarkable and swift as was this industrial development, the surplus products were only made available for the world at large by the preponderating capacity of sea carriage with which Great Britain had emerged from her long and arduous struggles for freedom. In 1818 she possessed no fewer than 21,528 vessels of 2,426,969 tons, the oversea parts of the Empire having about 3,981 vessels of 247,499 tons; her nearest competitor was her own English-speaking offshoot, the United States of America. Throughout the nineteenth

century, indeed, until the outbreak of the Civil War, in 1860, the United States remained by far the most formidable competitor of Great Britain on the seas. But this event, with its calamitous results on America's foreign trade, together with the great natural advantages enjoyed by Great Britain when the iron- and steel-built ship began to prove its superiority over the wooden vessel, led in the latter part of the century to the Mother Country securing an immense lead in shipbuilding as well as in ship-running. In 1914, when the Great War began, the total mercantile tonnage of the British Empire, in respect of steam vessels only, amounted to 12,440,000, while that of the United States was only 1,195,000. Germany had become the chief rival in the carriage by sea of passengers and goods.

That the marvellous change which had come over the life of these islands was for some time not realized by those in authority is perhaps easily to be understood. Thus, although in the earlier decades of the nineteenth century the number and range of the country's industrial activities had enormously increased, parliamentary representation rested almost entirely in the hands of the agricultural interests, which were slow to appreciate the advent of new times. It is true

that a new and more humane spirit was abroad, as was evidenced by the abolition of the slave trade in 1807, owing almost entirely to British initiative, backed with the force of British sea-power, while in 1833 a further and fresh act freed all existing slaves in British territory. At home, however, there was great misery, partly as the natural result of the impoverishment caused by the prolonged wars with France, and latterly with the United States, and partly owing to the industrial movement from the south part of the country, where modest domestic industries had hitherto flourished, to the midlands and north so as to be near the rich coal measures.

When it is remembered that within a space of forty years the population of England and Wales increased from eleven millions to nearly eighteen millions, it will be realized what new and critical problems in self-government had to be solved by the people of this country. Into the nature of most of these problems this is not the place to enter, but some idea of the changes that had to be wrought will be gathered from such facts as that in the year 1816, for instance, towns so important as Leeds and Manchester were without parliamentary representation, while the benches of the House of Commons were filled with agricultural M.P.s sitting for boroughs consisting

in some cases of not more than a couple of dozen houses; that such hygienic necessities as windows and soap were made the subject of taxation; that mere children were frequently put to death for such crimes as the theft of a few shillings; and that the existing Corn Laws spelt almost literal starvation to large sections of the new industrial workers in an island that was every year becoming less self-supporting in the matter of its food supplies.

From the point of view of the mercantile marine, however, the modification of the old Navigation Acts was the most directly important event. Huskisson's measure of 1825, for example, opened up the whole of British colonial trade with foreign countries on condition that it was to be carried either in British ships or those of the country concerned, and that such countries, if they wished to make use of the new privileges, should adopt similar measures in regard to the trade of the Empire with their own colonial possessions—terms very quickly accepted by almost every important overseas Power. The tendency exhibited toward a more liberal interpretation of commerce in its international aspect, afterwards found fuller expression when the existing Navigation Acts were repealed once and for all, opening all British harbours to the ships of every

country on equal terms and allowing British shipowners to sign on crews irrespective of their nationality.

It has since been sometimes claimed that the growth and prosperity of British shipping in the first half of the nineteenth century was due in the main to the influence of the Navigation Acts. In that event it might have been anticipated, as it was anticipated in some quarters, that with the final repeal of those measures the British mercantile marine would shrink. But the contrary was the experience, as Sir Thomas Farrer—afterwards Lord Farrer—found, when, as Permanent Secretary to the Board of Trade, he looked into the statistics in 1873. At the end of 1850 the amount of shipping owned in this country was 3,504,944 tons, while in 1873 it had increased to 5,912,314 tons.

> "It was, of course, to be expected," the Secretary of the Board of Trade remarked,[1] "that when the foreign trades of the different countries were opened to foreign ships, the native ships of each country would do a smaller proportion of that trade, finding their compensation in the new trades between other countries thus opened to them. And so it

[1] *Vide* "The Merchant Navy" (Official History of the War) by Archibald Hurd. Vol. I.

happened in the case of all maritime countries except Great Britain. But in her case, with a trade far exceeding that of any other country, and increasing more rapidly than that of most countries, her shipping has not only continued to do the same proportion of her own trade as it did before the trade was opened to other nations, but has increased that proportion. Nor is this all. The foreign trade of each foreign country has also increased very largely, and the native shipping of each foreign country no longer does the same proportion of her own trade as it formerly did. The proportion which native shipping no longer does must be done by ships of some other flag, and though we have no complete figures to show how much of the trade of each of these countries is done by the British and how much by foreign flags, we have some evidence to show that the British flag comes in for the lion's share of it."

Summarizing all the evidence which he had been able to collect, the Secretary of the Board of Trade came to the conclusion that

"It is abundantly evident, not only that British merchant shipping has, in the twenty years succeeding the repeal of the Navigation

> Laws, enjoyed its due proportion of the increase in the trade of the world which has followed on free trade and the use of steam, but that it has obtained much more than its due proportion, and has outdistanced many of its once-dreaded competitors. Having special advantages in the possession of coal and iron, and having the mechanical genius to turn these advantages to account, it has led the way and secured for itself, not only the largest share of the carrying trade of the world, but the most valuable part of that trade."

Under conditions of freedom and in face of world competition, British shipping increased and flourished as it had never done before. Rivalry acted as a tonic; the construction of ships was improved and the conditions in which the crews lived were bettered. The trade of the country advanced by rapid strides. Ignoring the political travail that resulted in the repeal of the Corn Laws and the Reform Act, the genius of the country, flowering in the later Georgian and earlier Victorian epochs, proved itself capable of rising to the opportunity that the new and unprecedented world-conditions had opened up. The population had increased, as we have said, by

the middle of the century to nearly eighteen millions, and this in spite of the fact that seven millions had emigrated overseas. In the immense change, too, brought to bear by the advent of steam and iron upon the science and art of navigation, upon the problems of shipbuilding and the possibilities of overseas trade, and upon, indeed, the whole of the world's ocean-communications in general, it was Victorian England that led civilization.

Into the details of this evolution we need not enter here, and with some of the chief personalities responsible for the change we have already dealt in a previous volume.[1] Since Newcomen and Watt had made their inventions which heralded the advent of the steam age ashore the shadow of the steam engine had been cast over the mercantile marine. As early as 1737 Jonathan Hulls had been responsible for an interesting and almost forgotten invention which represents probably the earliest attempt to apply steam power to navigation. Granted a patent by George II, he described his device in a little tract, still extant though very seldom seen, which he himself published at the price of sixpence.[2] With the mechanical details

[1] "The Sea Traders."

[2] The author is indebted to Mr. Francis Edwards, High Street, Marylebone, for a copy of this tract.

involved we have not space to deal, but the accompanying illustration, consisting of a reproduction of Hulls's original drawing, will give some idea of the "new-invented machine for carrying vessels or ships out of and into any harbour, port, or river, against wind and tide, or in a calm." He remarked, echoing the plaint of many inventors before and since, that "There is one great Hardship lies too commonly upon those who propose to Advance some New, tho' useful, Scheme for the publick Benefit: The World abounding more in rash Censure than in a candid and unprejudiced Estimation of Things, if a Person does not Answer their Expectation in every Point, instead of Friendly Treatment for his good Intentions he too often meets with Ridicule and Contempt."

Designing to utilize the recent pioneer work in respect of steam power achieved by Newcomen, Jonathan Hulls saw no further sphere for his own invention than to enable sailing vessels to be taken in and out of port under adverse conditions of wind, tide and weather. His machine, he modestly thought, might be considered "Cumbersome and to take up too much Room in a Vessel laden with Goods, Provisions, etc.," but, he added, "If this Machine is put in a separate Vessel, this Vessel may Lye at any Port, etc.,

to be ready on all occasions. A Vessel of a small Burthen will be sufficient to carry the Machine to take out a large One. A Vessel will serve for this Purpose for many Years, after she is thrown off and not safe to be taken far Abroad." The agent of propulsion evolved by the ingenious Hulls was, as will be seen, a kind of steam paddle-wheel. In order that the accompanying illustration may be better understood, Hulls's elaborate and precisely worded "Explanation" is appended:

"A, Represents the Chimney coming from the Furnace.

"B, The Tow-Boat.

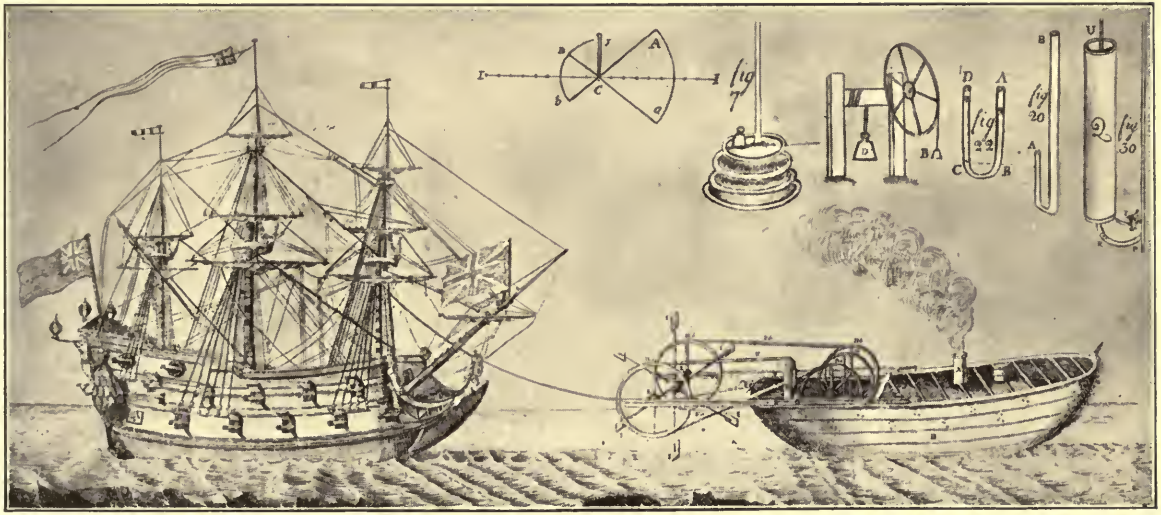
"C C, Two pieces of Timber framed together to carry the Machine.

"D *a*, D and D *b*, are three Wheels on one Axis to receive the Ropes, M F *b* and F *a*.

"*Note.*—M is the same Rope that goes into the Cylinder Fig. 30.

"H *a* and H *b* are two Wheels on the same Axis with the Fans IIIIII and move alternately in such a manner, that when the Wheels D *a*, D and D *b* move backward or forward they keep the Fans IIIIII in a direct Motion.

"F *b* is a Rope going from H *b* to D *b*, that when the Wheels D *a*, D and D *b* move forward, moves the Wheel H *b* forwards, which brings the Fans forward with it.



Jonathan Hulls' "New Invented Machine"

"F *a* is a Rope going from the wheel H *a* to the Wheel D *a*, that when the Wheels D *a*, D and D *b* move forward the Wheel H *a* draws the Rope F and raises the weight G, at the same time as the Wheel H *b* brings the Fans forward.

"When the Weight G is so raised, while the Wheels D *a*, D and D *b* are moving backward, the Rope F *a* gives way, and the Power of the weight G brings the Wheel H *a* forward and the Fans with it, so that the Fans always keep going forward, notwithstanding the Wheels D *a*, D and D *b* move backwards and forwards as the Piston moves up and down in the Cylinder.

"L L are Teeth for a catch to drop in from the Axis, and are so contrived that they catch in an alternate Manner, to cause the Fans to move always forward, for the Wheel H *a* by the power of the weight G is performing his Office, while the other Wheel H *b* goes back in order to fetch another Stroke.

"*Note.*—The weight G must contain but half the weight of the Pillar of Air pressing on the Piston, because the weight G is raised at the same time as the Wheel H *b* performs its Office, so that it is in effect two Machines acting alternately by the weight of one Pillar of Air of such a Diameter as the Diameter of the *Cylinder* is.

> "If it should be said that this is not a New Invention, because I make use of the same power to drive my Machine that others have made use of to Drive theirs for other purposes. I Answer, The Application of this power is no more than the Application of any common and known Instrument used in Mechanism for new invented Purposes."

Jonathan Hulls was evidently surrounded by many sceptics, and he proceeded to give "answers to some questions that have been made concerning the possibility and usefulness of this undertaking."

Query I.

"*Is it possible to fix Instruments of sufficient Strength to move so prodigious a Weight, as may be contain'd in a very large Vessel?*

"*Answer.*—All Mechanicks will allow it is possible to make a Machine to move an immense Weight, if there is Force enough to drive the same, for every Member must be made in a proportionable Strength to the intended Work, and properly braced with Laces of Iron, etc., so that no part can give way or break; if the Braces, etc., necessary for this Work had been put in the Draught, it would have been so much crowded with Lines that the main Instruments could not be so well perceiv'd.

Query II.

"*Will not the Force of the Waves break any Instrument to Pieces that is placed to move in the Water?*

"*Answer.*—First, It cannot be supposed, that this Machine will be used in a Storm or Tempest at Sea, when the Waves are very Raging; for if a Merchant lyeth in a Harbour, etc., he would not choose to put out to Sea in a Storm if it were possible to get out, but rather stay until it is abated.

"Secondly, When the Wind comes a Head of the Tow-Boat the Fans will be protected by it from the violence of the Waves, and when the Wind comes Sideways, the Waves will come Edgeways of the Fans, and therefore strike them with the less Force.

"Thirdly, There may be pieces of Timber laid to Swim on the Surface of the Water on each side of the Fans, and so contriv'd as they shall not touch them, which will protect them from the Force of the Waves.

"Up in-land Rivers, where the Bottoms can possible be reach'd, the Fans may to taken out, and Cranks placed at the hindmost Axis to strike a Shaft to the Bottom of the River, which will drive the Vessel forward with the greater Force.

Query III.

"*It being a continual Expence to keep this Machine at Work, will the Expence be answered?*

> "*Answer.*—The work to be done by this Machine will be upon particular Occasions, when all other means yet found out are wholly Insufficient: How often does a Merchant wish that his Ship were on the Ocean, when if he were there, the Wind wou'd serve tolerably well to carry him on his intended Voyage, but does not serve at the same time to carry him out of the River, etc., he happens to be in, which a few Hours work of this Machine woul'd do: Besides, I know Engines that are driven by the same Power, as this is, where materials for the purpose are dearer than in any navigable River in England; therefore Experience demonstrates, that the Expence will be but a Trifle to the value of the Work perform'd by those sort of Machines, which any Person that knows the Nature of those things may easily calculate."

So far as is known, Jonathan Hulls never reaped any advantage from his "new invented machine." The marine steam engine was to be a development of the future, and not until the first half of the nineteenth century did British shipping begin to experience the change from sail to steam.

The launch in 1802 on the Forth and Clyde Canal of Symington's *Charlotte Dundas*, the first successful practical steamer constructed in these islands, was the precursor of this revolution. The building in 1819 of the first iron ship, the

crossing of the Atlantic in a little over a fortnight by the two steamers, *Sirius* and *Great Western*, in the year 1838, with the establishment almost simultaneously of two such outstanding lines as the Cunard and the P. & O., and the creation in 1850 of the Marine Department of the Board of Trade—these were the most noteworthy achievements of what was a widely-spread and many-brained national development.

The State had at last begun to realize officially the importance of the mercantile marine to the new industrial England, no longer self-supporting in the matter of food. It had been enacted, for instance, as the result of an official inquiry, that all iron steamers should be divided by watertight bulkheads into three divisions; that steamers should pass to the port side of each other; that all sea-going vessels should be provided with boats in proportion to their tonnage; that steamers, when within twenty miles of the coast, should carry lights to be prescribed by the Admiralty; that passenger steamers should be surveyed half-yearly by surveyors to be approved by the Board of Trade; and that accidents to steamers should be reported to the Board of Trade, that Department having power to inquire into the cause of the loss.

National feeling had also been aroused by the rough and insanitary conditions under which the

crews of merchant vessels had sometimes been forced to serve, and subsequent legislation resulted in a continual improvement of these conditions throughout the latter half of the nineteenth century. Perhaps the most important group of laws was known as the Mercantile Shipping Act of 1875, in which the Board of Trade was given very stringent powers of inspection; it also legalized certain suggestions made by Mr. Samuel Plimsoll, embodied in what is now known as the Plimsoll Mark. The most enterprising, successful and humane shipowners welcomed wisely directed measures for adding to the safety of ships at sea and improving the comfort of the crews, because they tended to add to the prestige of the British mercantile marine, and those who opposed them were soon to discover how far their obstinacy led them astray.

The advent of steam and iron, the establishment of new and efficient lines running by time-table between specific ports, the development of passenger liners, and all the changes that thronged the busy years of the nineteenth century, left the main unit of the British mercantile marine what it had always been—the cargo-carrying ship, or tramp. This was still the fabric, as it were, upon which the newer specialist ships may reasonably be regarded as the embroidery; and it was the

tramp, improved in structure and manned by a better educated and better paid *personnel*, that opened up the new trade routes, remained the pioneer in sea carriage, and still formed the bulk of British mercantile sea power when the Great War broke on the world.

The application of steam to the tramp ship was a comparatively recent development. Its strongest appeal to the maritime mind was, of course, first based upon the fact that it could secure far more punctual sailings and arrivals and a much shorter and more constant length of voyage. It was thus natural that the first exploitation of steam should have been in vessels intended mainly for the carriage of passengers and mails. There is, in fact, no definite record of the existence of any "tramp" paddle-steamers, in the strict sense of the word, and it was really the introduction of the screw propeller that was eventually to lead to the gradual disappearance of the old "wind-jammer" from the seas.

Apart from this, the most influential factors in the evolution of the tramp steamer may perhaps rightly be held to be the repeal of the Corn Laws, the opening of the Suez Canal in 1869, the development of the submarine cable, and the introduction of the triple expansion steam engine in the middle 'eighties, just at the time when

steel plates were replacing iron. The first of these factors produced the trade and led to the demand for increased carrying facilities. The second lent an enormous impetus to the opening up of commerce with the Far East. The third produced an engine far more economical in respect of fuel, working in association with better boilers of higher pressure and of much longer life. As an illustration of the longevity of tramp ships of this epoch, it is interesting to note that there was recently a tramp steamer still afloat which was built by Palmer Brothers, of Newcastle-on-Tyne, so long ago as 1852.

During the Crimean War there were a few tramp steamers in use upon routes passing through the Mediterranean and Black Sea, ships of some 500 to 1,000 tons dead weight, and in the American Civil War some tramp steamers were employed both by the North and South; but the trade of the world was still being conducted in sailing ships in the 'sixties, and only a few steam tramps of 500 to 1,000 tons dead weight were to be met with. These were engaged in the Baltic, Mediterranean, American and Canadian trades, the St. Lawrence River in these days only permitting craft drawing 17 to 18 feet to get up to Montreal, whereas to-day liners of 15,000 to 20,000 tons dead weight trade there every season. It was

not, however, until after the opening of the Suez Canal that the great development of tramp steamers, in the modern sense of that term, came about, and it is perhaps interesting to consider for a moment how and where this was accomplished.

It is to the shipbuilders of the Tyne and Wear, and later to those of the Hartlepools, that pride of place must be accorded as the pioneers of this immense transformation. From the early 'seventies of the last century to the early years of the present, the bulk of British steam tramp ships hailed from east coast ports, from Newcastle and Sunderland, from Whitby and the Hartlepools. The Welsh ports, afterwards so prominent in this respect, had then paid no appreciable attention to steam ships, while the Mersey and Clyde contained the register ports of most of the finest sailing vessels then leaving these shores.

It was not, indeed, until the 'eighties that the Clyde shipbuilders began to appreciate the advantages of steam as applied to tramps; and while undoubtedly some of the finest passenger, cargo and mail carrying liners in the world were sailing from the Mersey, the tramp steamer was a rare sight. Toward the end of the 'nineties, however, the pendulum began to swing from the east coast to the west. For reasons a little obscure, New-

castle and Hartlepool ceased to compete with the sailing ship owners of the Clyde, who were now beginning to build a very high-class type of tramp steamer. Their example, too was being closely followed in Cardiff, which, by the outbreak of the Great War, had become one of the most important tramp steamer ports in the United Kingdom.

Why there should have been this geographical change with regard to the ownership and production of tramp steamers it is a little hard to say. Possibly the long-voyage trade, so familiar to Glasgow owners in sailing ship days, did not seem to them at first so profitable a field for the introduction of steam power, while to the east coast owners, with the pre-eminent experience in the Baltic, Black Sea and east coast American trades, the advantages of steam may have appeared more manifest. But the chief factor in the change may very possibly have been a financial one.

Sailing ships had for the most part been owned on what was known as the sixty-fourth system—that is to say, a shipowner owned all or most of the sixty-four sixty-fourths of his ship. The early tramps, down to the first years of the 'eighties, were also owned in accordance with this system. Steamers at this time began to increase in size; in the 'seventies 2,000 tons dead weight was a large steamer. Nearly all were of the 'tween-deck

type. Hartlepool started the single-decked ship. It became the practice of some builders to build ships and set up managers to own them, retaining a mortgage on the ship until the instalments were paid. These managers were not slow in preaching throughout Yorkshire the financial profits then opening out to the converted tramp ship trade, and the Yorkshire wool districts freely invested their surplus profits in sixty-fourth shares with very satisfactory results. Prior to 1885 there were, in fact, probably fewer than a dozen limited liability companies owning tramp steamers. But when bad times came the "Sixty-fourthers," as they were commonly known, instead of receiving handsome dividends, found themselves liable for large calls. In consequence, investors under the old system naturally became rare, and a new era arose when a sailing ship owner conceived the bright idea of turning the ownership of one vessel into a limited liability company. The idea spread rapidly. Instead of asking people to invest their £200 to £600 in a share of a sixty-fourth ship, with the possible prospect of calls instead of dividends, £1 shares, with no further liability, were advertised.

In Wales particularly the new system became immensely popular, and it was in this way that Cardiff began to emerge as an important ship-

owning port. Meetings were held in villages, and magic lantern slides were shown of the wonderful craft which would enable everyone to "get rich quick." Glasgow, too, largely developed its steam tonnage on the single ship basis with a very large number of shareholders.

But about this time a new development occurred. When times were good and profits large managers found themselves reluctantly paying away substantial dividends to many shareholders, and began to look about for some means of avoiding this. At the same time mortgage facilities increased, and the managers were importuned by competing builders to build, leaving fifty per cent. of the value of the new ships on mortgage. Trust companies were found to be willing, and indeed eager, thus to lend money on shipping securities, and many ships were laid down, especially in Glasgow, on this basis. Companies were formed with a capital representing fifty per cent. of the value of the ship, the remaining fifty per cent. being mortgaged in the ship herself. Good times came again, and these owners, with few shareholders, reaped a correspondingly large harvest, and the most successful modern shipowning has proved to be that conducted by such companies working on a small paid-up capital.

The development of tramp shipping, of course, coincided with the change in trade from sail to steam. In the early days the Baltic and Mediterranean were the principal hunting-grounds of tramps; then came India and Burmah, with its rice cargoes; and a little later the Plate; and, later still, the Pacific and Australia. Sailers were gradually being driven off the seas, and only the freights during the Great War gave them a chance again, and that only for a short time.

Both in the actual construction, the methods of ownership, and the owning of modern tramp steamers Great Britain was so far the pioneer that, as we emerge into the twentieth century, we find British vessels responsible for more than half of the world's sea-carrying trade, nearly one-third of its total commerce being actually conveyed in British tramp ships, while the movement of its surplus seasonal crops was almost entirely dependent upon this class of vessel. Laden with such cargoes as coal, pig-iron, slag, salt, iron and steel goods, machinery, hardware, spirits and chemicals, they brought back timber, grain, flax, butter and eggs from the Baltic; wine, seeds, skins, wool, wax and cattle foods from Spain and Morocco; hemp, marble, olive oil and hides from the Mediterranean; cotton, grain and wool from Egypt; and grain, fruit, ore, mohair and opium

from the harbours of the Black Sea. From more distant parts, such as North America, they came laden with cereals, meat, butter, cheese, fruit and sugar, and with refrigerated meat and butter from South America. They brought nitrates from Chili; sugar, bananas, cocoa and rum from the West Indies; wool, hides, skins, maize, copra and palm kernels from South and West Africa; sugar and hemp from Mauritius; wool, tallow, wheat and frozen meat from Australia; dairy produce from New Zealand; and wheat, rice, tea, copra, nuts, jute, rubber and teak from India, the Malay Peninsula, the East Indies and China. Nor was their work confined to the carrying trade between the world at large and the United Kingdom and the Dominions, since large numbers of them were giving employment to British sailors and officers, besides earning profits for British owners and traders, in the carrying trade between foreign countries or by picking up chance commissions during world-voyages that lasted, in many instances, two to five years.

In more than one sense the tramp ship, the essential life-brigade of a population of upwards of forty millions, had become the chief agent in the conveyance of imports into the United Kingdom, which in the year 1913 amounted to some 55 million tons in weight and some £769,000,000

in value, while they were similarly responsible for the larger proportion of exports, which in the same year amounted to 100 million tons in weight and £635,000,000 in value, 76 million tons of these exports consisting of coal. Nor had the ship-building activity that such an immense volume of ocean trade supported in any way dwindled. For although the United Kingdom had been outstripped by both America and Germany, owing to their greater natural resources, in the production of iron and steel, there was launched in British and Irish yards between the years 1910 and 1914 no less than 1,660,000 gross tonnage of new merchant vessels, more than was sent to sea by all the other countries of the world put together.

It will be gathered from such figures as these how vast a part the tramp ship has played in the maintenance of a civilization more than ever dependent upon ocean communications and overseas trade.

CHAPTER XI

THE UNIVERSITY OF THE SEA

On the Eve of the Great War—The Persistence of the Sea-Instinct—From Ship's Boy to Shipowner—A Typical Tramp Voyage—Cheapness of Sea Carriage—An Apprentice's Experience—A Passage of One Year and Forty-Two Days—Two Hundred and Ninety-Seven Days' Overdue.

FOR some years before the outbreak of the Great War in 1914 there had been, in spite of confidence in the efficiency of the Royal Navy, a frequently expressed suspicion that the sea instinct of our population had become modified during the century of peace. That this was not the case events were to show. In spite of the vast proportion of the community of these islands dedicated to the new industrialism, the *personnel* of the mercantile marine, as well as the fishing and sea-coast populations generally, rose to heights of endurance, ingenuity and courage unparalleled even in Elizabethan times; while thousands of mechanics, city clerks and others embraced the sea-services with enthusiasm, and were found to be more than equal to every demand. Thus, during the war, it was our mercantile marine that,

under naval orders, carried out the effective blockade of the enemy—for the 10th Cruiser Squadron was eventually formed of large merchant ships manned by merchant seamen—and moved millions of troops to and from every theatre of war, besides maintaining them in food and arms and ammunition, as it maintained the whole civil population of these islands, and provided nearly four thousand auxiliary vessels of war, manned almost wholly by seamen uncovenanted to the State. Nor is it perhaps realized, in view of the great industries that to-day employ so many men and women, that the actual *personnel* of our mercantile marine is, in fact, larger than at any period of our history. Upwards of 200,000 of our population, apart from those employed in the Navy, still go down to the sea in ships, and a far larger number are, directly and indirectly, employed on shore by our various maritime energies.

The whole life of our island, and the world-wide Empire of which it is the pivot, would inevitably droop were the sea, with all it suggests of romance and adventure and power, to lose its attraction. Fortunately, no such fear need be entertained. The names of distant ports are still music to most of us; and, apart from every economic motive, the appeal of the sea to the

roving and adventurous and curious spirit locked in the breast of almost every man of the British nation is as irresistible now as it has always been. Nor is it to be so fully and easily satisfied as in the everyday life and toil of the average tramp or cargo-bearing ship, and in such true narratives as are here included—the early experiences of a typical seaman and tramp ship owner in his first two commands and the sailing ship experience of a modern apprentice—we record what is representative of the vast mass of experience accumulated in the great school of British seamanship.

A native of the village of Appledore, near Bideford, in Devon, Sir William Reardon Smith, Bt., upon whose earlier experiences we have been able to draw, was of typical West Country ancestry. Both his father and grandfather had been lost at sea, his mother being left a widow with eight children. It was when he himself was only twelve years old that he spent one of his school holidays on board the smack *Unity* of 52 tons. His first voyage in the little vessel, plying between Appledore and Newport, determined his future calling. After many other experiences in vessels of all sorts, the young sailor, afterwards destined to be himself a tramp ship owner, obtained his first command in the s.s. *Baron Douglas* of 2,800 tons gross register, with a speed of from 9 to 10

knots. As both this voyage and the next may be taken as typical of the sort of work carried on day by day in a modern British tramp steamer, the account of these voyages may perhaps best be given in Sir William Reardon Smith's own words:

"The voyage commenced at Amsterdam, loading general cargo for the Dutch African Railway, and the cargo consisted of tenders, bridges—that is to say, buttresses of the bridges, all dovetailed and keeled ready for erection—together with the iron-work for the bridges. We had in addition about a thousand tons of rails, and railway stations consisting of very light brick covered with wood on each side. We also carried telegraph poles and wires and all the different apparatus pertaining to a light railway.

"In addition to the above, we had a considerable cargo for Port Elizabeth, Algoa Bay, whence we proceeded *via* Durban to Delagoa Bay, where we completed discharge of the Dutch cargo. In Delagoa Bay we were ordered to proceed to Calcutta, calling at Point de Galets for orders. We arrived at Point de Galets, bunkered, and proceeded to Calcutta, where we loaded jute for Dundee, with the prospect of a five months' voyage before us. Arriving at Dundee, we proceeded to the Tyne for dry docking and loading.

We loaded there for Tuticorin, Southern India (in the Gulf of Manar), and after discharging at this port we proceeded to Akyab to load rice for Amsterdam. After discharging the rice, we proceeded to Liverpool, where we loaded salt and dynamite for Calcutta. After discharging this cargo at Calcutta, we loaded a cargo of seeds at Calcutta for Antwerp. The passage from Calcutta to Antwerp, in the south-west monsoons, involved a rather rough passage between Ceylon and Cape Guardafui, and owing to the steamer having wooden decks, the heavy seas breaking against the front of the bridge, poop and hatchways, caused some leaks, and we found the ship was listing, through water getting into the hold and down the lee side.

" After getting out of the monsoon and passing Guardafui, in the Gulf of Aden, the weather became fine, and the hatchways were opened. We found considerable water in the 'tween deck, and the cargo was taken on deck. The scuppers in the 'tween deck had become congealed owing to the water passing through the linseed and other seed, and this had stopped the water from going into the bilges. After placing the cargo on deck, we put shifting boards in the hatchway, and put this cargo down on the other side. On arrival at Perim, we had all our deck steam pipes repaired.

These had all been more or less carried away by the seas. From Perim to Cape Finisterre the weather was uneventful, but at Finisterre we fell in with a nasty, dirty, westerly wind; on arrival at Antwerp we found that, at about the time we were passing Finisterre, the *Serpent* had gone down with the loss of all hands but one. From Antwerp we then proceeded direct to New Orleans, from New Orleans to Havre, from Havre to Glasgow, from Glasgow to Rangoon, from Rangoon to Bremerhaven, from Bremerhaven to the Tyne, and from the Tyne to London, where I left the *Baron Douglas*, loading for Java, to take command of the *Baron Elibank*.

"This was towards the end of 1892, and we loaded tin at Swansea for Batum, calling at Constantinople *en route*. At Batum we loaded case-oil for Java, and it is interesting to note that the freight at this time was eightpence per case of four English gallons! Although carried 11,000 miles, this freight was less than what was paid for carriage by rail between Bideford and Appledore, a distance of three miles. We called at Constantinople, Port Said, and Point de Galle *en route*, and arrived at Tjilatjap, on the south side of Java. After discharging at Tjilatjap, we took in a portion of copra as homeward cargo, and proceeded *via* Sunda Strait and Thousand Islands to Batavia for

orders, thence to Cheribon, Tegal, Pekalongan, and Samarang, on the north side of Java.

"After taking in cargo at all these ports, we proceeded to Padang and Emma Haven, on the south side of Sumatra, where we completed loading, bunkered, and proceeded homewards *via* Point de Galle and Port Said to Marseilles. After discharging at Marseilles, we were ordered back to Batum, and again loaded case-oil for Colombo and Madras. After completion of discharge at Madras, we proceeded to Calcutta, where we loaded rice and general goods, with Mohammedan pilgrims on deck, and proceeded thence to Berbera, Aden, Hodeida and Jidda, where the pilgrims were landed and cargo discharged. I think Jidda is the worst place I have visited. The heat was terrific during a sand storm, and many pilgrims who had been to Mecca and were awaiting reshipment in other ships to take them to their own countries were dying of cholera.

"Most of the English crew during the Red Sea trips were left at Aden, and some Somali boys were taken on deck and below to run the ship until we came back to Aden. From Jidda we proceeded to Aden, and loaded salt for Calcutta. After discharging, we again loaded rice and general goods, with a deck cargo of pilgrims, for the same round—Berbera, Aden, Hodeida,

Jidda, back to Aden and Calcutta. At Calcutta we loaded part cargo of wheat for Rangoon, and at Rangoon we loaded rice for Port Said, Alexandria, Smyrna, Piræus, Constantinople, from whence we sailed to Sulina, Galatz and Braila to load for Rotterdam. This voyage was completed in eighteen months."

Such is the life of a tramp ship! From railway stations and linseed to case-oil and Mohammedan pilgrims, from Port Elizabeth to New Orleans, and from Rotterdam to Batavia, with every sort of cargo and in every sort of weather, there could scarcely, perhaps, be a more arresting picture of a tramp ship's voyage than that contained above. It will readily be seen what breadth of experience and what knowledge of ships and the ways of the sea, as well as of men, are necessarily predicated in the command of a vessel of this description.

How British seamen acquire their intimate knowledge of seamanship, their resource and their indifference to the buffetings of fate, may be gathered from such an account as the one that follows of the experiences of a young apprentice —Mr. (now Captain) A. A. Bestic—on his first voyage some five years before the outbreak of the Great War. He went to sea in a sailing ship, and it is in such a vessel that the sea arts are learnt quickest and surest; hard schools, but efficient!

The narrative opens on board the *Denbigh Castle*, a three-masted sailing ship in which he was serving, at a moment when her master, Captain Evans, had taken his crew into his confidence, telling them that though he had set out for Mollendo, a little port on the coast of Peru, he had determined that he must "run the Easting down." It was March 10, 1909, and the *Denbigh Castle* had been five months at sea, for the last two of which she had been struggling in vain to round the dreaded Cape Horn. Although she was, comparatively speaking, so near her destination, her captain had at last reluctantly come to the conclusion that he would have to give up a vain attempt and make, instead, for the coast of Australia. All round the ship the surface of the ocean was being torn into foam by the raging wind, and there was no sign on the horizon of any perceptible change in the weather. Patches of green seaweed were beginning to appear on the decks that had so long been continuously awash, and when the crew assembled to hear the captain's decision they had, and no wonder, somewhat lost heart. "A miserable looking huddle of humanity they were, with streaming oilskins lashed at the wrists and ankles with rope-yarn in a hopeless endeavour to keep dry, their skins encrusted and their eyes bloodshot with salt, the lines on their

hands cracked and gaping in deep cuts through constantly gripping half-frozen ropes, and their faces pinched and drawn through cold and exposure." They received the news, however, of the proposed change of course and consequent immense lengthening of the voyage with a kind of numb philosophy, most of them rather relieved, perhaps, than otherwise at the prospect of, at any rate, leaving the waters of Cape Horn.

But to turn the ship about and bring her before the wind under the conditions that existed was no easy matter; it was foreseen that there would be a moment when she would be beam on and in the trough of the tremendous sea. Oil was poured over the bows, however, and although at one moment a green wall of water fell crashing across the deck, with its additional weight of hundreds of tons, the ship was safely brought about. "Waist deep," this apprentice afterwards wrote, "sometimes up to their necks in water, the men fought their way to the various ropes, and the big ship began to gather way with the wind and sea behind her. Figures could now be seen clawing their way out on the swaying yards to loose the upper topsail, and presently the voice of the chanty-man could be heard above that of the storm, with the crew joining in at each alternate line and the sails jerking into position a couple of

inches at a time in response to each chorus. Gradually the swaying balloon flattened itself out into a big straining surface of canvas, and the ship had begun to run the Easting down *via* Australia."

The new port of call was, of course, far distant, but the weather began to improve a little, until once more the ill-luck that had seemed to dog the vessel descended upon her again. The strong westerly winds, which had previously been so steady, became erratic. Progress became slower and slower; and, to make matters worse, the stock of provisions on board began to dwindle to an alarming extent. Placed on short rations, the vessel's mixed crew, already weakened and demoralized by their long ordeal in the hostile waters of Cape Horn, became discontented and refused to do any work save that which was absolutely necessary for the navigation of the ship.

"Life gradually became a hideous monotony. As the weeks passed everybody became more silent and morose. We grew sick of one another's stories, conversation, and even faces. Rationing became more strict, and we were compelled to try and augment our meals by eating albatross and such sea-birds as we could catch. And I sometimes used to wonder," the narrator added, "if

there had ever been such things as land, home or friends, or if we had not all been born and reared on this Flying Dutchman of a ship. It was a sad day indeed for us all when the supply of tobacco at last ran out, since, as the tea had run out as well, we could not fall back on this substitute so often used at sea. Paraffin oil could now only be used in the binnacle lamps for steering purposes, and when night fell all our living quarters were in darkness until sunrise. Our provisions had by this time become very nearly exhausted, and we were put on a reduced rate of three biscuits a day, one biscuit representing a square meal. Most of us spent our spare time in devising various ways of serving up the biscuits. One favourite way was to soak it in water, and then fry it in some rancid grease that the cook had saved during the voyage. Another method was to break it into a powder, make a dough of it by mixing it with water, and fry it like a pancake. For tea or coffee, whichever one liked to call it, the same biscuits had to be brought into requisition. This miracle was performed by breaking off a corner of the biscuit and putting it into the oven until it was burnt black.

"It was then ground to a powder and hot water poured on it, and, being necessarily drunk without milk or sugar, it was not a palatable

beverage. We called it coffee at breakfast and tea at tea-time."

One of the crew went mad; but at last, on June 19, after having been two hundred and fifty days at sea, Rottnest Island was sighted, just off the port of Fremantle, Western Australia. Here, with a satisfaction which can be imagined, cigarettes, fresh meat, bread, butter and vegetables were obtained, though the ship's difficulties were again augmented by the desertion of a considerable proportion of the disaffected members of the crew.

On July 5, however, the indomitable vessel, after sixteen days at Fremantle, began the second half of a voyage that was to take her round the world. In mid-winter, with eight hands short, and with some of the new members of the crew entirely without sea experience, the only consolation was that the gales, which must inevitably be encountered, would probably come from the right direction.

All went well for the first six weeks, until the vessel was off the Island of Tasmania, on August 19. Here the captain, who had decided to go south of the island rather than through the Bass Straits, since he would thereby have more room to navigate, altered his mind in view of the favourable winds and the amount of time that

would be saved by going through the straits. But no sooner had these been entered than the weather suddenly changed. The ship's luck was out! "A shrieking gale arose, accompanied by blinding snow. It was impossible for us to retrace our way out of the straits, as the wind was blowing us farther in. We could not run before it, as the snow was too thick to allow us to see more than half a ship's length away. There was nothing for it but to heave to and hope for the best. Owing to the shallowness of the water the waves rose to an exceptional height, and were even of a more dangerous type than those which we had experienced off the Horn. Our upper works soon began to suffer. Bulwarks were bent and stanchions twisted, as though the unseen hand of some giant were at work. The side of the apprentices' cabin was completely broken in, and during our watch below we were compelled to take refuge in the sailors' fo'c'sle. Here we were not very much better off, for such a quantity of water had got in through the door that every time the ship rolled the water washed against the bottoms of the lower bunks.

"The next day, at about four o'clock in the afternoon, the weather cleared, revealing to us more fully the intense fury of the elements, and immediately a shout came from the man on the

look-out that there was something on the port bow. For a moment the captain could not see anything, but the next instant a great column of water rose about seventy feet into the air and then subsided in clouds of spray. There was a glimpse of something black, and then the column of water rose as before. The captain then recognized that the vessel was almost upon the Crocodile Rocks, and at once ordered the helm to be put up and some sail immediately set. Feverishly we hauled on the halyards, knowing that our lives depended on our strength; but hardly had the first sail been set when there was a report as though from a three-pounder gun, and the huge sail was careering like a handkerchief across the storm-tossed waves. With renewed energy we attacked the next sail, and it was with anxious eyes that we watched it, for there was no doubt that upon it all our hopes of life depended. Luckily it held, and gradually the vessel began to answer the helm.

"But it was still touch and go. All hands were called upon the poop, so that if she struck they would be clear of the falling masts, and the captain and mate stood by the compass, knowing that they had done all that they could and that the rest lay with Providence and the ship. Rolling in a smother of foam and water, the ship seemed to hesitate a second as though hypnotized by the

awful fate lying in wait for her, and then, with a decisive swoop, she swung clear. We could now hear the roar of the surf above the howling of the storm, and the water seemed to fling itself higher, as though infuriated at having been thwarted of its prey; and I could not help thinking how worthy those rocks were of the name which had been given to them. We continued to run before the gale, and made good progress. On clearing the coast of Australia, the captain decided to go north of New Zealand, where we should be more likely to have fine weather in which to allow us to make new sails and repair those which had suffered so severely. But here the weather went to the other extreme, and we encountered calms and light winds for weeks at a time. At last, however, after having been nearly five months out from Fremantle, we sighted the high peaks of the Andes; but yet another adventure was in store for us before we ultimately reached our destination.

"One night, when we were only fifteen miles south of Mollendo, it fell a flat calm; but we noticed that, despite the absence of the wind, we were gradually getting nearer to the shore, which could only be accounted for by the fact that we must be in a current. We could not drop anchor owing to the depth of the water, and as the boom

of the big Pacific swell thundering on the shore grew louder and louder we began to wonder if, after all, we were destined to be wrecked so close to port.

"At last the water grew shallow enough to enable us to let go the anchor, but it was not long before the ship began to drag slowly but surely towards the surf. Fortunately, our perilous position had been seen from the shore, and the news dispatched to Mollendo as speedily as possible. All the next day we worked unceasingly at what is known as kedging. This consisted of putting a small anchor with a rope attached into one of our lifeboats, rowing out some distance ahead of the ship, and then, having thrown the anchor overboard, endeavouring to pull the ship towards it. All our efforts, however, proved to be unavailing, and every time the vessel sank between each swell we expected to feel her scrape and bump on the bottom. But at the last moment the situation was saved, as we saw a tug-boat, sent out to us from Mollendo, coming at full speed towards us round a headland. So, on November 21, 1909, we were towed into our port of destination, having taken exactly one year and forty-two days to make a passage which should normally have taken only one hundred and ten days, and being two hundred and ninety-seven days overdue."

It would be difficult for a sea novelist—a Conrad, Clark Russell or Marryat—to picture more vividly the sort of experience that falls to British merchant seamen in their ordinary day's work. They are all graduates of a school in which Neptune rules in spite of every advance of ship design, construction and equipment.

In process of time the people of these islands have become sea-dependent to an extent unparalleled in the history of the human race. What Rudyard Kipling wrote of "big steamers" is equally true of little steamers—to cargo-carrying ships of all sizes indeed.

Oh, where are you going to, all you big steamers,
With England's own coal, up and down the salt seas?
We are going to fetch you your bread and your butter,
Your beef, pork, and mutton, eggs, apples, and cheese.
For the bread that you eat and the biscuits you nibble,
The sweets that you suck and the joints that you carve,
They are brought to you daily by all us big steamers,
And if anyone hinders our coming you starve.

CHAPTER XII

THE OCEAN EMPIRE

The Mission of the Tramp Ship—The Growth of Empire in the Last Two Hundred Years—The Extent of the British Commonwealth of Nations—Its Dependence on Sea-connections—" Kingship and Sword and Power of the Sea "—Oversea Settlements.

THE British tramp ship is, in the final analysis, but the expression of the human factor. It is an outgrowth of national character, a concrete attempt by men of courage and action to meet the needs of an island community thrown off from the side of the European continent. In spite of all mechanical developments—the transition from wood to iron and from iron to steel, the introduction and perfecting of the steam engine, the advent of the marine turbine and other changes—the ultimate issue must always remain the human one; man is greater than the material he handles. Between the individual sea-adventurer, however, and the tramp ship there is a peculiar bond, as well as a close analogy. As the one is to the community of men, so is the other to the community of ships; and the object of this little book has been to serve as a reminder of the immense

service rendered by tramp ships, their owners and crews, to the cause of civilization. In the great liberal movement, world-wide in its influence, the tramp ship has played a larger part, perhaps, than any other single agent, for the flag has followed the trade.

If in closing we pause to consider the great commonwealth of nations now united in peaceful endeavour within the British Empire, it is in no spirit of arrogance, but rather because this is the outstanding example in the world's history of the tramp ship's achievement. The Royal Navy has had its share in times of war, but it is the tramp ship which has been the true missionary of civilization.

That the growth of the Empire has been, in the main, the fruit of less than two centuries is, of course, a notable and often forgotten fact. But the result, as we know it, is merely the visible expression of a long and slow preparation; and it is because, as a whole, the people of these small islands have been true to their racial sea-instinct that these great results have accrued. To a certain extent, indeed, they have been undesigned and even very largely undesired—the obedience to natural laws rather than the fulfilment of a deliberate and conscious policy. The sea traders, men whose curiosity and desire for wealth

prompted them to go forth, wandered over the seas and acted, in effect, as pilots to the pioneer emigrants who have multiplied from generation to generation.

The real significance of the earlier colonial movement was scarcely appreciated, even so late as the middle of the eighteenth century, by the vast majority of Englishmen living on shore and busy with their own affairs; but under the influence of the Great War the last trace of indifference to the Imperial movement vanished.

Had it not been for the peculiar Anglo-Saxon combination of organizing ability with a love of personal liberty which is appreciative, as a working rule, of a similar desire in others, such a commonwealth—may we call it the tramp ship Empire?—could never have held together throughout the stress and strain of the Great War. At no previous stage of human history could it have been possible to point to so splendid an example of the binding power of common ideals. With these islands, having an area of less than 122,000 square miles and a population of but 47,000,000, we find at the close of the Great War associated —bound together by common interests and owning the same symbolic Crown—about 450,000,000 souls inhabiting territories of nearly 14,000,000 square miles.

In the course of the centuries the tramp ship has been weaving gossamer threads of credit and prestige which have become the warp and woof of the Imperial structure as we are familiar with it to-day. When the expansion opened in Queen Elizabeth's reign there were only five million men, women and children in the little obscure island of England. As Professor J. R. Seeley reminded his readers many years ago[1]: "In the last years of Queen Elizabeth England had absolutely no possessions outside Europe, for all schemes of settlement, from that of Hore, in Henry VIII's reign, to those of Gilbert and Raleigh, had failed alike. Great Britain did not yet exist, Scotland was a separate kingdom, and in Ireland the English were but a colony in the midst of an alien population still in the tribal stage. With the accession of the Stuart family commenced at the same time two processes, one of which was brought to completion under the last Stuart, Queen Anne, while the other has continued without interruption ever since. Of these, the first is the internal union of the three kingdoms, which—though, technically, it was not completed till much later—may be said to be substantially the work of the seventeenth century and the Stuart dynasty. The second was the

[1] "The Expansion of England" (1882).

creation of a still larger Britain comprehending vast possessions beyond the sea. This process began with the first Charter given to Virginia in 1606. It made a great advance in the seventeenth century, but not till the eighteenth did Greater Britain, in its gigantic dimensions and with its vast politics, first stand clearly before the world."

During the years covered by "the expansion of England" the tramp ships have been playing their parts manfully in all the seas and oceans; crews of the right temper have never been wanting to "pay the price of Admiralty." From their homes in towns and villages and hamlets they have gone out, a noble company, to confront the elemental forces of Nature, and to struggle with enemies, often against heavy odds. They have constituted the vanguard of the democratic movement. Loving freedom themselves as the winners of the freedom of the seas, they have sought to make others sharers of its blessings. The British Crown has become the symbol of enlightened government; the Mother of Parliaments at Westminster has been the model on which a score and more of other Parliaments have been fashioned overseas; the British conception of the balance of law and license has been planted in many far-off lands. In this way the unconsidered island community, which Philip of Spain looked upon with

contempt, if with a certain degree of fearful foreboding, has blossomed into a Commonwealth of free peoples, united by the sea for purposes of industry and commerce, as well as political and social expression.

Since the early voyages, which were undertaken—often in face of fierce opposition by jealous defenders of the existing order of things—by Saxon, Plantagenet, Tudor and Stuart merchant seamen, there have been added to the comradeship of the original little band of islanders the great Asiatic peninsula of India, with its varied dependencies and teeming populations, the Dominions of Canada and New Zealand, the Commonwealth of Australia and the Union of South Africa—all of them self-governing. Associated with us in generous bonds of partnership we also find in Asia, Burma, Ceylon, the Straits Settlements, part of Borneo, Hong Kong and Wei-hai-wei. In Africa there is the great self-governing domain of Egypt, as well as the Sudan, Uganda, Somaliland, Nyassaland, Swaziland, Basutoland, Kenya Colony, Rhodesia, Zanzibar, Bechuanaland, Ashanti, Nigeria, Gambia, the Gold Coast and Sierra Leone. Scattered over the seas in every quarter of the globe a visitor from Mars would find flying the same flag over Gibraltar, Malta and Cyprus, Aden, Perim and Sokotra, St. Helena,

Ascension Island, the Seychelles and Papua, the Island of Mauritius and its dependencies, the Falkland Islands, the Leeward and Windward Islands, Bahama, Barbadoes, Jamaica, Trinidad, Tobago, the Fiji Islands, the British Solomon Islands, the Gilbert and Ellice Islands, the Bermudas, British Guiana, British Honduras, Newfoundland and Labrador. Since the Great War, too, there have come under British influence the mandatory territories of Palestine, Mesopotamia, the Cameroons, Tanganyika, Togoland, and portions of South-West Africa, New Guinea and Western Samoa. What an amazing catalogue it is! And yet it does not exhaust the list of which every name represents the ship-borne human activity of some individual or group of individuals trained in the one great school of the sea.

We are confronted to-day with what, for want of a better name, we call an Empire which dwarfs into insignificance all the Empires, ancient and modern, of which history holds any record; and the rainbow of hope which arches over it is its sea power—the power of the ship to draw the various widely distributed peoples closer together for the high purposes of civilization.

The task which the tramp seamen of centuries ago began is not complete, for it lies with us

to justify their initiative, resource and courage. Empire building may be at an end, but the work of Empire settlement has only just begun. We have to prove ourselves just stewards of the heritage which has descended to us—a heritage the wealth of which lies, in large measure, undeveloped, to the impoverishment of the human race. On the one hand, something like a quarter of the habitable globe is embraced in this Empire; and on the other, the territory includes six or seven million square miles suitable for white habitation in the temperate zone, and as much again of territory, densely populated, in the tropics. The British Empire is an economic unit. Between them these territories comprise, as Mr. L. S. Amery, who has done so much to promote Empire settlement, has recalled, every variety of climate and soil; they contain unlimited resources of every foodstuff, raw material or source of power that are required for the sustenance of an immense population at the very highest level of civilized welfare. What are the obvious conclusions a casual visitor from another planet would draw from these facts? He would begin by assuming that this favoured race was busily intent upon spreading itself as rapidly and as evenly as possible over its vast homelands, and concentrating its efforts upon the development of the

boundless resources, temperate and tropical, which it has at its disposal. He would be surprised and perplexed to learn that three-quarters of the total white population live huddled together upon one-fifth of the area suitable for their habitation, while the remaining fourth, thinly sprinkled over vast expanses, are unable, for want of sufficient mutual support, to make the most of the bounty Nature so richly offers.

That is a state of unequal distribution which the Empire Settlement Act, worked in co-operation with the great overseas Dominions, is intended to correct. A new era of pioneering has opened in which the spirit of our seamen pioneers may once more be exhibited. Instead of barely ten million people, Canada can support one hundred million; Australia's population can easily be doubled; New Zealand and, in a lesser degree, South Africa stand in need of more settlers. In these and other regions the need is for pioneers, and if that need is to be met the seamen of our race must make it possible. For the modern pioneer will not submit to conditions of isolation and loneliness which the pioneer of earlier days bore with resignation. He wishes to remain in "the family circle," the sharer of its age-long traditions and a participator in the ordinary everyday life of the council chamber, the

mart, and even the drawing-room. In strengthening these ties wireless telegraphy and the cable, in co-operation with the newspapers in the Mother Country and overseas, can do much; air-power may develop new and rapid routes of travel; but to the limit of vision these pioneers must look to ships—the liner and the tramp.

With the flight of the centuries, rich with achievement, the British peoples, with their millions of homes fed from the Seven Seas, have passed into the possession of a great estate. They are warned by their past to remain faithful to the doctrine of sea power. When Edward III had won his great victory at Sluys, in virtue of which he claimed "the Lordship of the Four Seas," he struck gold coins, called "nobles," to commemorate the event. On one side was a representation of the King, sword in hand, standing on the deck of a ship. A poet of a later age interpreted the design in these words:

> Four things our noble showeth me—
> Kingship and sword and power of the sea.

The little island community has evolved in course of time into a widely scattered family of nations. The Kingship has survived the evolution; King George V is still "by the Grace of God King of the United Kingdom of Great

Britain and Ireland and of the British Dominions beyond the Seas," to quote from the device on the coins we handle every day. The Crown is the symbol, and something far more potent than the symbol, of the unity of the race. "No King," as an overseas statesman once declared, "no Empire."

And what of the sea, with its great ships and small, its merchantmen and its men-of-war? The "Power of the Sea" offers a solution to most of the problems which confront the British peoples. Thus after the lapse of the best part of seven hundred years, during which the tramp ship has been faithfully fulfilling its mission, the legend persists and the cry is still for ships and seamen.

> Time, the ocean and some favouring star
> In high cabal have made us what we are.

INDEX

A-SHAPED mast, the, superseded, 17
Aberdeen harbour, 146
Acts: Empire Settlement, 198; Mercantile Shipping, 162; Navigation, 114, 136, 150, 151
Adriatic, the, Republican trading fleets of, 111
Africa Company, Royal, 138
Agricultural interest, its power in Parliament, 148, 149
Aid, 128
Albuquerque, 101
Alexander the Great, 35
  campaigns of, 44
Alexander VI, Pope, 103
Alexandria, foundation of, 46
  passes under Roman jurisdiction, 46
Alfred the Great encounters the Danes, 65
Algebra, 87
All-English trade-route opened up, 120
Amazon, Pinzon discovers mouth of, 104
Amber, importation of, 56
Amboyna, Island of, massacre of English merchants in, 135
America: discovery of, 104
  lost to Britain, 142
America, South, 4
American Civil War, tramp steamers in, 164
Amery, L. S., 197
Amorites, 10
Anaximander designs first map of the world, 40
Anaximenes, his conception of the earth, 41
Anchors, 60
Angelo, Michael, 96
Angles, 64
Anglo-French wars, 139, 140, 142
Anglo-Saxon articles of commerce, 65, 66
Anglo-Saxons, and the ocean-stage of civilization, 62
  overseas commerce, 65
Anson, Admiral, his voyage round the world, 140
Anthropology, 8–9
Antigua, 138
Antilles, the, discovery of, 103
Arab culture, rise and spread of, 86 *et seq.*
Arabian Empire, 86, 87
Arabian numerals, 87
  shipping, 72
  travellers, 88
Arabs, 54
Aragon and Castile, union of, 102
Arkwright's spinning-frame, 145
Armada, Spanish, 107, 117, 129, 130
Ascension Island, discovery of, 101
Assyria, rise of, 28
Assyrian Empire, 25
Astrolabe, invention of the, 108
Astronomers, Arabian, 88
Astronomy, 39, 82, 108
Athelstan, King, 66
Athens, 30
Atlantic, the, first crossing of, 103
Autos-da-fé, Spanish, 96
Avebury, Wiltshire, 15
Avon Canal, 146
Azores, the, Portuguese trading post in, 99, 100

BABYLONIA, beginnings of sea power in, 13
Babylonian astronomers, 39
Babylonian Empire, 22
Bacon, Roger, 89

Bagdad, 87
Baltic, primitive boats on the, 20
Baltic and Mediterranean ventures of English seamen, 111 *et seq.*
Baltimore, Lord (*see* Calvert, Sir George)
Banking and money-lending, 74
Barbadoes, 138, 196
Baron Douglas, 174, 177
Baron Elibank, 177
Barques, 80
Bart, Jean, 139
Basque race, 9
Batuta, travels of, 91
Beachy Head, battle of, 139
Beatus, map of, 85
Bematists (trained measurers), 44
Bermuda Islands, occupation of, 137
Berytus, Phœnician settlement in, 23
Bestic, Capt. A. A., experiences of, 179 *et seq.*
Beyrout, 23
Bible, the, 2, 13
  Phœnician enterprise recounted in, 25 *et seq.*
Bill of lading, an Egyptian, 53
Bireme, the, inventors of, 29
Board of Trade, the Marine Department created, 161
Boats, primitive, 9, 15, 20
Bolto, a Saxon trader, 66
Bordeaux, English sailors at, 112
Brazil, discovery of, 101, 104
  fortified trading post at, 122
Breda, Treaty of, 138
Bremen, port of, 73
Brigg, a dug-out unearthed at, 20
Bristol Channel, Norsemen penetrate, 65
Bristol firms, foreign agents of, 118
  trade with Iceland, 112
Britain, becomes a Roman colony, 45
  coastal sea-lore, 57
  discovered by Pytheas, 43
  sea essential to existence, 114
  visit of Himilco to, 33
  visited by Phœnicians, 56
British Commonwealth of Nations, 195 *et seq.*
British Empire, beginnings of, 138
  growth of, 191
  territory of, 197
British Empire, total mercantile tonnage of (1914), 148
British Museum, 11, 39, 53
British sea power, fruits of, 143 *et seq.*
British shipping, progress and difficulties of, 110 *et seq.*
British trade, rise of, 76
Bronze used in shipbuilding, 28
Burial, Egyptian custom of, 61
Burmese junks, 17
Byzantine Empire, Carthage under control of, 37
Byzantium, 83 (*see also* Constantinople)

Cable, submarine, 163
Cabot, John, New World discoveries of, 121 *et seq.*
Cabral discovers Brazil, 101, 104
Cadamosti, Alvise, probable discoverer of Cape Verde Islands, 100
Cadiz, Phœnician settlement at, 24
Cæsar, Julius, 45, 57, 58, 60, 64
Calais, blockade of, 68, 76, 79
  loss of, 123
Caledonian Canal, construction of, 146
Caligula, Emperor, state galleys of, 58–9
Calvert, Sir George (Lord Baltimore), 137
Canada passes to England, 140
Canal, transport by, 144
Canals: Avon and Kennet, 146; Caledonian, 146; Forth and Clyde, 160; Suez, 163, 165
Canals, construction of, 145, 146
Canary Islands, 99
Cannon Street Station, London, 74
Canton, Portuguese trade with, 101
Cao, Diego, discovers Congo River, 100
Cape Bojador, 100
Cape of Good Hope, 100, 101
Cape Verde Islands, discovery of, 100
Capitalism, foundations of, 5
Caracks, 80
Caravels, 80

Cardiff, port of, 166, 167
Cargoes, typical, of a tramp ship, 169 *et seq.*
Carolina (North and South), 138
Carpini, J. de Plano, 89
Carthage, conquers Spain, 36
  destruction of, 45
  foundation of, 27–8
  loss of sea-power, 37
  Phœnician colony at, 27
  rise of, 30
  temple of Melkarth, 33
  under control of Byzantine Emperors, 37
Carthaginian shipments, 36
Cartography, improvement in, 108 (*cf.* Maps)
Cartwright's power-loom, 145
Castile and Aragon, union of, 102
Caucasians, 2, 7, 9, 22
Cavendish, Thomas, circumnavigates the globe, 129
Caxton, William, 96
Ceuta, Portuguese colonial outpost at, 98
Charlemagne, 87, 93
Charlotte Dundas, 160
Chartered companies, English, 120
Chatham dockyard, 146
Chesapeake Bay, 137
China, civilization in, 14
Chinese junk, 17
Christianity, growth of, 84
Cinque Ports, the, and maritime growth, 78
  provide fleet for Edward I, 78–9
Circumnavigation of African continent, 32
  of the world, 105, 129
Civilization, and sea power, xiv
  first beginnings of, 4
  influence of water on, 1 *et seq.*
  three stages of, xv
Cloth manufacture, British, 76; Flemish, 73
Clyde shipbuilders, 165
Colbert, 138, 139
Cologne, Hansa of, 72
Colonial rivalry, Greek and Phœnician, 30
Colonies, foundation of British, 136 *et seq.*
Columbus, Christopher, 102 *et seq.*
  discovers West Indies, 103
Companies, chartered, 120
Congo River, discovery of, 100
Connecticut, 138
Constantinople, 83, 94
Copenhagen, battle of, 142
Copernicus, his theory of the earth's revolution round the sun, 96
Coracles, 9, 64
Cordova, 87
Corn Laws, 150; repeal of, 153, 163
Cornwall, Phœnician trade with, 25
Cosmas Indicopleustes, merchant and monk, 85
Cretan culture, 12
  type of vessel, 18
Crete, decadence of, 28
  fall of, 24
  international sea-law of, 13
  riverside civilizations of, 5
  trade with Egypt, 13, 14
Crimean War, tramp ships in, 164
Crocodilopolis, town of, 17 (note)
Cromwell, 136
Crusades, the, educational value of, 80
  the fleet of Richard I, 79, 80
Cuba, discovery of, 103
  restored to Spain, 141
Culture, early evidences of, 12
Cunard Line, establishment of the, 161
Cunha, Tristan da, 101
Cyprus, Phœnician settlement in, 24
Cyrene, 41

Damascus, 87
Danes, 65
Danzic, port of, 73
Darius, 31
Davis, John, 125, 128–9
Deal galley, the, 63
Decks, fighting, 36
Denbigh Castle, 180 *et seq.*
Denmark, and English trade, 112
  Henry VII's treaty with, 114
"De Revolutionis Orbium," 96
Diaz, Bartholomew, rounds the Cape, 100
Dockyards, 146

Dominica, acquired by England, 141
discovery of, 103
Dorian Greeks, 41
Dover, 78
Drake, Francis, 117, 124, 125, 127, 128
Druids, 14
Dug-outs, primitive, 20
Dundee harbour, 146
Dutch East India Company, 134
Dutch oversea traders, 134 *et seq.*

East India Company, 74, 134, 135, 138
Easterlings, 73, 116, 117
Economus, battle of, 36
Edgar, King, fleet of, 67
Educational centres, 87
Edward I, King, 70, 78, 79
Edward III, King, "Lord of the Seas," 68, 76, 77, 199
Edward VI, King, annuls Hanseatic privileges, 116
Edwards, Arthur, reaches Kazbin, 126
Egypt, beginnings of sea-power in, 13, 16
decline of maritime influence, 28
in Roman occupation, 45
Semitic dynasty in, 13
Egyptian astronomers, 39
bill of lading, 53
type of vessel, 16, 17, 18
Elizabeth, Queen, 116, 119, 123, 124
annuls Hanseatic League, 116 *et seq.*
expels Hanse merchants, 117, 118
navy of, xv
Empire, beginning of British, 138
growth of, 191, 195 *et seq.*
Indian, 140
Empire Settlement Act, 198
England, and Levant trade, 115
as a sea-power, 107
expansion of, 137, 193–4
fusion of races in, 68
industrial awakening of, 144 *et seq.*
strained relations with Spain, 119
Victorian, 154
England and Wales, population of, 149, 153
English and Scottish Crowns, union of, 137
overseas commerce after Norman Conquest, 69 *et seq.*
Ephesus, 30
Equator, the, crossed by Pinzon, 104
Eratosthenes, 40
calculates circumference of earth, 44
Eridu, foundation of, 9
Euphrates, as a centre of culture, 6, 8
Europe, Western, eclipse of scientific geography in, 88
European ships contrasted with those of Rome, 58 *et seq.*
Evans, Captain, 180
Exports, British, 147
Ezekiel, book of, 25
Eziongeber, 27

Faröe Islands, 43, 65, 77
Farrer, Sir Thomas (Lord), and the Navigation Acts, 151–3
Fellowship of Merchant Adventurers of England, 78, 111, 115, 116, 118
Fenner, George, voyage to Guinea, 126
Ferdinand, King of Portugal, 102, 103
Fighting-tops, 81
Fitch, Ralph, voyage of, 128
Flag, English, saluting the, 69, 136
Flanders, craftsmen of, 73
galleys, 75
Flemish craftsmen in England, 76
Flemish Hansa of London, 72, 73
Florida, an English possession, 141
discovery and annexation of, 104
Fontainebleau, Treaty of, 140
Forth and Clyde Canal, 160
"Fortunate Islands," the, 99
France, challenges English shipping, 137
rise of, as a world sea-power, 139 *et seq.*
Freedom of the Seas, 131
French harbours on Atlantic coast, 139
Friesland, oarsmen recruited from, 65
Frigate, the, evolution of, 135

Frobisher, Martin, 124, 125, 127
Frobisher's Sound, 128
Froude, James Anthony, 123

Gabriel, 128
Gadeira (*see* Cadiz)
Galleys, with banks of oars, 58
Gallic wars, 45
Gama, Vasco da, rounds the Cape, 100
Gambia River entered by Diego Gomez, 100
Gaunt, John of, 98
Genesis, book of, 2, 13
Genoa, as a trading centre, 72
Genoese, Marco Polo captured by, 90
Geography, beginnings of, 39 *et seq.*
  scholastic, 83, 85, 86
  scientific progress of, 107
George II, King, 154
George V, King, 199
German and Baltic Hansa, 72, 73
Germanicus, fleet of, 62
Germany, pre-war sea-carriage of, 148
  primitive dug-out of, 20
Gerrard, Sir William, 126
Gibraltar, captured by Sir G. Rooke, 139
Gilbert, Sir Humphrey, 124
  takes possession of Newfoundland, 128
Glasgow, as ship-owning port, 168
Gnomon, the, inventor of, 40
Goa, Portuguese in, 101
Goldsmiths, Guild of, 77
Gomez, Diego, enters Gambia River, 100
Good Hope, Cape of (*see* Cape)
Goths, 84
Granada, conquest of, 102
Great Britain, becomes a maritime country, 68
  compared with the Mediterranean countries, 121
  her navy at close of Napoleonic wars, 143
  pre-war sea-carrying trade of, 169, 170
  primitive dug-outs of, 20
Great War, the, 116, 173
Great Western crosses the Atlantic, 161
Greek learning, submergence of, 83
Greeks, and scientific geography, 39
  challenge Phœnician supremacy, 29
  defeat Persian and Phœnician fleet, 32
  early type vessel of, 18
Greenland, 65
Grenada, 141
Grimsby harbour, 146
Grisalva, Juan de, 105
Grocers, Guild of, 77
Guilds, formation of, 77

Hakluyt, on fleet of King Edgar, 67
Hamburg, 73
Hammurabi, 13
Hannibal, campaign of, 37
Hanno explores African coast, 33
Hanseatic League (and groups), 72, 73, 74, 76, 111, 115
  disestablishment of, 116 *et seq.*
Harbours, construction of, 144, 146
  opened to foreign ships, 150
Hargreaves, James, invents the spinning-jenny, 145
Haroun al Raschid, 87
Hartlepool, shipbuilders of, 165, 167
Hastings, 78
Hawke, Admiral Lord, victory of, in Quiberon Bay, 140
Hawkins, John, 124, 126, 127
Hawkins, William, voyage to Brazil, 122
Hayton, King of Lesser Armenia, 89
Hebrides, 65, 77
Henry I, King, 70, 76
Henry II, King, 70
Henry IV, King, grants charter to merchant seamen, 111
Henry V, King, 98, 112
Henry VI, King, 112
Henry VII, King, 115
  grants bounties for shipbuilding, 114
Henry VIII, King, as supreme head of English Church, 119
  expansion of shipping under, 118

Henry the Navigator, Prince, 98, 100, 102
Hereford map, the, 86
Herodotus, 32, 41–3
Hide ropes, 18
Hides, inflated, as boats, 9
Himalayas, 9
Himilco, his voyage to Europe, 33
Hipparchus, 45, 84
Hiram, King of Tyre, 27
Hittite Empire, 22
Hittites, 10
Hogue, La, battle of, 139
Holland, primitive dug-out of, 20
Holyhead harbour, 146
Honduras, 104
Hood, Admiral, 141
Houtman, Cornelius, 134
Hudson Bay, 140
Hudson Strait, 129
Hull harbour, 146
Hull Museum, a dug-out in, 20
Hulls, Jonathan, invention of, 154 *et seq.*
Huskisson, William, 150
Hwang-Ho, the, 6
Hythe, 78

Iberian race, 9
Iceland, 43, 65, 77, 112
Imperialism, 192
Incorporation, Charter of, 111
Indian Empire, British, foundation of, 140
Indian Ocean, 6
Industry, revival of, 145, 146
Innocent IV, Pope, mission to Mongols, 89
Inter-island sea-traffic, 10
International sea-law, beginnings of, 13
Iron-built ships, 148, 160
Isabella, Queen, 102, 103
Italy, Southern, Dorian settlement in, 41

Jamaica, discovery of, 103
James I of England and VI of Scotland, 137
James II, King, 139
Japan, discovery of, 102
Jenkinson, Anthony, travels of, 124, 125–6
Joannes de Plano Carpini, 89
John I of Portugal, King, 98
John of Austria, Don, 95
John of Gaunt, 98
Junks, 17
Jutes, 64

Katharine of Aragon, divorce of, 119
Kennet Canal, 146
Kief, 71
"King of the Four Quarters of the World," the, 10
Kingship and Empire, 199
Kingston harbour, 146
Kipling, Rudyard, 189
Kremer, Gerhard (Mercator), chart of, 108
Kublai Khan, 90

La Hogue, battle of, 139
Lake Moeris, 17 (note)
Latitude, first calculations of, 43, 48
Laws, maritime, 50 *et seq.*
Leon, Juan Ponce de (*see* Ponce)
Lepanto, battle of, 95, 107
Levant Company, 138
Libyan tribes, 13
Limited liability companies, shipping, 167
Liners, contrasted with tramp ships, xii
establishment of Cunard and P. and O. Line, 161
Lion, 123
Lisbon, 102
Lombards, the, and English trade, 74
London, Hanseatic merchants' house in, 74, 115
Longitude, determination of, 45, 48
"Lord of the Seas," Edward III as, 68, 199
Louis IX, King, 89

Louis XIV, King, 139
Lübeck, port of, 73
Luther, Martin, 96

Macham, Robert, discovers Madeira, 99
Madeira, Portuguese trading post in, 99
Maffeo, a Venetian traveller, 90
Magellan, Ferdinand, explorations of, 105
Magellan, Straits of, 105
Mahommedan Empire, and Greek culture, 86
Mahomet II storms Constantinople, 94
Malabar coast, Da Gama's visit to, 101
Malacca, Portuguese possession of, 101
Malay Archipelago under Portuguese dominion, 101
Malta, Phœnicians in, 24
Man, primeval, 2
Mankind, three great primary families of, 2
Maps, and map-making, 7, 39, 40 *et seq.*, 85, 86, 108
Marianne Islands, 105
Marine architecture, development of, 29
Mariner's compass, 108
Marinus of Tyre, 45, 46, 84, 87
Maritime laws, 50 *et seq.*, 150, 162
Maritime supremacy, Dutch struggle for, 134 *et seq.*
Marseilles, 43
Mary, Queen, 116
Mary Gifford, 122
Maryland, foundation of, 137
Massachusetts Bay Company, 138
Masts, A-shaped, 17
  fighting tops on, 81
Masudi, Arabian traveller, 88
Mathematics, 82, 108
Mauritius, discovery of, 101
Mayflower, 138
Mediæval trade-routes, 71 *et seq.*
Mediterranean civilization, early vessels of the, 18
  establishment of, 6, 54
Mediterranean civilization, Phœnician supremacy in, 31
  the centre of commerce, 38
Melkarth, temple of, 33
Menai Suspension Bridge, 146
Mercantile marine, personnel of, 172–3
Mercantile Shipping Act, 162
Mercator, chart of, 108
Mercers, Guild of, 77
Merchant-Adventurers of England, Fellowship of the, 78, 111, 115, 116, 117, 118
"Merchant Navy, The," 151
Merchant seamen, 111
  ships, 68
Merchants of the Staple, 77
Mesopotamians, 4
Mexico, Spaniards in, 105
Michael, 128
Middle-men, and the control of trade, 72, 77
Miletus, a school of mathematical and astronomical learning in, 40
Minorca, 140, 142
Missionaries, 88
Moeris, Lake, 17 (note)
Money-lending and banking in London, 74
Mongol civilization, beginnings of, 6
Mongol Empire, 89
Mongols, a primary family of mankind, 3
Montserrat, 138
Moors, 98. 99
Moscow, as trading centre, 120
Motive power for earliest vessels, 18
Murex, the, 26
Muscovy Company (*see* Russian)
Mylæ, battle of, 36

Napoleonic wars, 142, 143
Naram-Sin, 10
Navigation Acts, and their repeal, 114, 136, 150, 151
Navigation, art of, 11
  early, 12
Necho, King of Egypt, circumnavigates Africa, 32
Negroid race, 3
Nehemiah, book of, 27

Nelson, Admiral, 142
Nevis, 138
Newcastle, port of, 165
Newcomen, Thomas, 154, 155
New England, foundation of, 138
Newfoundland, annexation of, 140
New Haven, 138
New Jersey, 138
New York, 138
New Zealand, 14
Nicolo, Venetian traveller, 90
Nile, the, 6, 11
  battle of, 142
  birth of shipbuilding on, 17
  civilizations, 11
  first school of seamanship, 16
  primitive boats, 17
Nineveh, 28
"Nobles" in commemoration of victory at Sluys, 199
Nomadic peoples, 22
Norfolk wherry, the, 63
Norris, 117
Norse ancestry of British fishing fleets, 63
Norsemen, in the Mediterranean, 94
  their influence on shipbuilding, 59
  their skill in oarsmanship, 60
North American colonies lost to England, 141
North Carolina, foundation of, 138
Norway, early type vessels of, 20
Nova Scotia, 140
Novgorod, 71
Nunez, Vasco, 104

Oars, introduction of, 17, 18
Ocean civilization, 7, 62 *et seq.*, 97 *et seq.*
Ocean empire, Britain's, 195–6
Oceans, as highways of commerce, 132 *et seq.*
Ophir, Phœnician ships at, 27
Orkneys, 43, 65
Ormuz, Portuguese possession of, 101
Ottoman Turks, 94
Ownership and production of tramp steamers, 165
Oxenham, capture and death of, 127

Pacific Ocean, discovery of, 104, 105
Paddle-wheel, a steam, 154 *et seq.*
Paddles, propulsion by, 17, 18
  steering by, 11, 17
Paper, introduction of, 87
Papyrus ropes, 18
Parliamentary representation, 148, 149
Pasqualigo, Lorenzo, 122
Passengers, how Romans catered for, 58
  regulations regarding, 51
Pendulum, the, Arabian introduction of, 87
Peninsular and Oriental Line, 161
Persian Gulf, early vessels of, 19
Persian transport of troops, 31
Peru, Spaniards in, 105
Pharaohs, the, 13
Philip II of Spain, 117
Philippine Islands, death of Magellan in, 105
Phœnicia, Egyptian domination of, 24
  in Roman hands, 37
  under Persian rule, 31
Phœnician ships in Solomon's fleet, 27
  shipbuilding, 29
  type of ships, 18, 29
Phœnicians, 10, 13
  Biblical account of early tramp ships of, 25 *et seq.*
  circumnavigate African continent, 32
  colonies of, 25
  in Britain, 56
  open up trade, 24
  origin of, 21
  rise of, 16 *et seq.*
  settlement of, 22, 23, 24
  supersede Egyptian shipbuilders, 29
  their sea-genius, 21
Pilgrim Fathers, the, 138
Pinzon, 101
  crosses the Equator, 104
Pioneers, the call for, 198
Piracy, protection against, 115
Plassey, battle of, 140
Plimsoll, Samuel, and the Plimsoll Mark, 162
Plymouth dockyard, 146

Polo, Maffeo, 90
Polo, Marco, 90, 91, 121
Polo, Nicolo, 90
Polynesia, 4
Ponce de Leon, Juan, discovers Florida, 104
Ports, east and west coast, 165
Portsmouth dockyard, 146
Portugal, declines as a maritime power, 133
  maritime enterprise of, 100, 101
  rise of her overseas empire, 98 *et seq.*
Power-loom, invention of the, 145
Primrose, 126
Printing, introduction of, 96
Ptolemy of Alexandria, and his map of the world, 45, 46, 47 *et seq.*, 84, 87
Punic wars, 35 *et seq.*
Punt, land of, 11
Pyramids, the, 11, 13
Pythagoras, his theory of the world, 41
Pytheas of Massilia, probable discoverer of Britain, 43

"Quarrelling, Fighting and Striking," Rhodian sea law articles regarding, 51
Quebec, captured by Wolfe, 140
Quiberon Bay, Hawke's victory in, 140

Railways, first British, 146
Raleigh, Sir Walter, 124, 129, 137 (note)
Ram, the, a Phœnician invention, 36
Rameses II, 40
Rams of Roman vessels, 60
Raphael, 96
Red Sea, 6, 9
  early vessels of, 18
Reform Act, repeal of, 153
Reformation, the, 96
  effect on shipping, 119
Renaissance, the, 95
Rennie, John, 146
Rhode Island, 138
Rhodian sea law, 50 *et seq.*
Richard I, King, crusading fleet of, 79
Richelieu, Cardinal, 138
River stage of civilization, xv, 6
Rivers, the beginning of sea power, 2 *et seq.*
Road-making, 145, 146
Rodney, Admiral, 141
Roman and Western European ships, contrast between, 58 *et seq.*
Roman vessel, an early type of, 18
  fittings of, 58
Romans, mentality of, 83
  rise of sea-power, 35
  their contributions to geographical progress, 83
Rome, rise of, 45
Romney, 78
Rooke, Sir George, captures Gibraltar, 139
Ropes, hide, 18
Royal African Company, 138
Royal Navy, the, 115
Rubruquis, William of, 89
Rudders, stern, 81
Russian (or Muscovy) Company, the, 120
Rut, John, explorer, 122
Rye, 78

Sagres, Prince Henry the Navigator at, 100
Sail, the, introduction of, 18
Sailing ships, ancient, 9, 11, 17
  evolution of, 80
  ownership of, 166
  Xenophon's description of, 33
Sails, method of securing, 19
  skin or leather, 60
  tanned, 63
St. Christopher Island, 138
St. Helena, discovery of, 101
St. Katharine Dock, 146
St. Vincent, 141
Salamis, battle of, 32
Sandwich, 78
Sankh-ka-ra, his Egyptian fleet, 11
Santa Maria, 103
Saracens, the, 80
Sardinia, Phœnicians in, 24

Sargon of Akkad, 10, 39
Saxon England, trade and shipping in, 64 *et seq.*
Saxons, 64
Scandinavia, fish-carrying trade with England, 76
Scandinavian sailors, early, 57, 59, 61
Science, retrogression of, 83
Scilly Islands, Phœnician trade with, 25
Screw propeller, introduction of the, 163
Sea, the, call of, 173
Sea-borne trade, set-back after Norman Conquest, 69
Sea-civilization, birth of, 6, 16
Sea instinct of British, 63
Sea law, Rhodian, 50 *et seq.*
Sea power, beginning of, 2
Seamen-merchants, British, 111
" Seams " of a ship, 21
Semitic peoples, 10, 21, 22
Senegal, the, 100
Serpent, 177
Seven Years War, 140
  England's navy at end of, 141
Shakespeare, 124
Sheerness dockyard, 146
" Shepherd " Semitic Pharaohs, the dynasty of, 13
Sheppard, T., his description of the Brigg dug-out, 20
Shetlands, 41, 65
Shields around vessels, 36
Ship-barrow, 61
Shipbuilders, and tramp ships, 165
Shipbuilding, improvement in, 17
  Norsemen and, 59
  progress of English, 78, 80
  superior British, 130
  use of bronze in, 28
Ship-burial, 61
Shipmasters, trading duties of, 50
Shipowner, the, his responsibility under Rhodian code of laws, 51
Ships, first iron, 160
  mediæval development of, 80
  ownership of, 166 *et seq.*
  single-decked, 167
Shipwrights' Company, incorporation of the, 135
Sicily, Phœnician settlement in, 24
Sidon, 22, 25, 35
  fleet of, 31
  foundation of, 13
Sierra Leone, 100
Silk-spinning, primitive, 14
Single-deck ships, 167
Single-masted vessels, 17, 18
Sirius crosses the Atlantic, 161
" Sixty-fourthers," 166, 167
" Skin " of a ship, 21
Skinners, Guild of, 77
Slave trade, 123, 126
Slavery, abolition of, 149
Slaves as rowers, 20
Sluys, battle of, 68, 76, 81, 110, 199
Smith, Sir William Reardon, xvii
  describes life on a tramp ship, 174 *et seq.*
Smithfield martyrs, 96
Solomon, King of Israel, 27
Somaliland, 11
South Carolina, foundation of, 138
Southwark Bridge, 146
Spain, as a sea power, 106 *et seq.*
  conquers Portugal, 106
  conquest of, by Carthage, 36
  decline of, as a maritime power, 133
  hostility with England, 119
  usurps supremacy of Genoese and Venetians, 107
  war with, 140
Spanish Armada, defeat of, 107, 117, 129, 130
Spanish Succession, War of, 139
Spenser, Edmund, 124
Spinning-jenny and spinning-frame, 145
Steam, advantages of, 166
Steam engine, invention of the, 144, 145
Steam power, advent of, 145, 154
Steam tramp ships, 163, 164
Steamer, first practical, 160
Steel-built ships, 148, 164
Steelyard, the (Steel House), 115, 117, 118
Steering, stern paddles for, 17
Stern rudders, 81
Stone Ages, 2, 4, 22
Stonehenge, 15
Submarine cable, 163

Suetonius, 58
Suez Canal, opening of, 163, 165
Suleiman, Arabian traveller, 88
Sumeria, beginnings of sea-traffic in, 9
Sumerians, culture of, 8 *et seq.*
Sunderland, 165
Sweden, primitive vessels of, 20
Symington's first steamer, 160
Syria, Northern, Phœnician settlement in, 22

Tacitus, on the fleet of Germanicus, 62
Tarsessus (*see* Tarshish)
Tarshish, Phœnicians at, 24
Tarshish ships, 29
Telescope, invention of the, 108
Telford, Thomas, dock construction, etc., by, 146
Thales, founder of Ionic school, 40
Three-masted sailing ships, 80
Thrift, beginnings of, 5
Thule, land of, 43
Tigris, the, 6, 8, 9
Tison, Thomas, a West Indies shipper, 118
Tobago, 141
Tordesillas, Treaty of, 103
Trade route, an all-English, 120
Trade routes, 71 *et seq.*, 101, 102, 120, 137, 163
Trafalgar, battle of, 142
Tramp ships, activities of, 7
  application of steam to, 163
  evolution of, 8
  longevity of, 164
  Mediterranean, 10
  number of, 147
  the mission of, 190
  world's culture owed to, 97
Tramp steamer, evolution of, 163
Transport in 1845, 144
Tree trunks, hollowed (*see* Brigg, Dug-outs)
Tribes or clans, 3
Trigonometry, founder of science of, 47, 87
Trinidad, discovery of, 104
Triple expansion steam engine, 163
Trireme, the, inventors of, 29
  speed of, 36
Trust companies, 168
Tudor merchant adventurers, 114 *et seq.*
Turin Museum, early map in, 39
Turkey (or Levant) Company, the, 120
Turks, defeat of, by merchant-seamen, 95
  navy of, 94
  Ottoman, 94
Two-masted ship, stern-rudder steered, 81
Tyger, 128
Tyne, the, shipbuilding on, 165
Tyre, as trading port, 25
  Biblical lament for city of, 25 *et seq.*
  fleet of, 31
  foundation of, 13
  Phœnicians in, 22
  under Greek rule, 35
Tyrian dyes, 26

United States of America, maritime competition with Great Britain, 147
  total mercantile tonnage of (1914), 148
  (*See also* America)
Unity, 174
Utrecht, Treaty of, 139

Vandals, 84
Veneti, the, Cæsar's campaign against, 60
  ships of, 60–61
Venetian Republic, 93
Venetians, 92
  advance in shipbuilding, 93
  articles of commerce with, 75
  establish commercial factories, 93
  their rise as a sea-power, 92 *et seq.*
Venice, as trading centre, 72
  foundation of, 92
  trade with England, 75
Vespucci, Amerigo, 104

Victoria, circumnavigates the world, 105
Vikings, burial of, 61
piracy of, 64
Vinci, Leonardo da, 96
Virginia, 129, 137 (note)
Virginia Company, the, 137
Visi-Goths, 84

Wadi Alaiki, the, an ancient map of, 40
Wall paintings, 11
Walpole, Robert, 140
Warships, fighting decks erected on, 36
Water, its influence on civilization, 1 *et seq.*
Waterloo, battle of, 142
Waterloo Bridge, 146
Watt, James, invents steam engine, 145, 154
Wear, the, shipbuilding on, 165
West Indiamen, xii
Wheat, discovery of way to grow, 4
Wicker and hide boats, 9, 15
William of Rubruquis, 89
Winchelsea, 78
Wolfe takes Quebec, 140
Wyndham, Thomas, voyage of, 123

Xenophon's description of a Phœnician ship, 33 *et seq.*
Xerxes, 31

Yang-tse-Kiang, 6
Yards, 17, 18

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